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AMERICAN
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Returns in England Indicate That Make of 18,000 Cu. Ft. of 500 B.t.u. Gas Is Possible, Using Steam in Retorts

Expedient Whose Value Until Recently Was Thought to be Limited to Producing Blue Water Gas of About 300 B.t.u., Is Shown by Recent Research to Have Undreamed of Possibilities

By NORTON H. HUMPHRYS

All who are interested in the carbonization of coal, either in a commercial, technical or scientific sense, will find much matter for consideration in the numerous reports, recently published, of working experiences with vertical retorts, both on the continuous and on the intermittent system. Many of them include a wealth of detail that enables the subject to be closely followed, and there is some risk, in these busy and anxious times, that the whole may not be properly assimilated, and that some matter may be passed over and lost.

With increasing difficulty in the way of earning a fair dividend sufficient to maintain the standard and value of the property under his charge, the gas manager is eager for and welcomes any method that will, directly or indirectly, reduce the working expenses. The technologist, beset by difficulties in obtaining adequate supplies of material and labor, has equal reason to seek for any process that will increase production expressed either as cubic feet or as B.t.u And the student in the laboratory finds that many items hitherto regarded as established data are out of date and must be discarded or revised in the light of modern experiments.

An Expedient Whose Value Has Hitherto Been Underestimated

The use of steam in the retort, as a means of improving the yield of gas per ton, is a case in point. Up to quite a recent date its value for this purpose was considered as limited to the production of "blue gas," having a calorific value of about 300 B.t.u. per cubic foot. And the proportion that could be so admitted, in the absence of some extraneous process of enrichment, such as admixture with oil or other rich gas, was limited to the extent to which dilution could be allowed to proceed, without risk of falling foul of the local gas examiner. The gases, mixed in the cold, were a simple mixture, possessing qualities equal to the sum of those contained in the same quantities of the gases before mixture.

Enables Temperatures Hitherto Impracticable to Be Applied

Steam has risen from this limit to a wider platform and a more important position. It enables temperatures hitherto regarded as quite impracticable to be applied to the vertical retort without risk of injury or undue shortening of the working life.

Temperatures of 1,350 deg. C. or even 1,400 deg., which to a cautious worker appear to be getting uncomfortably close to the fusing point of pure silica, are in common use, and they increase the cubic feet per ton, with nothing approaching a proportionate deterioration of quality. The result is that the production of calorific value in the gas from a ton of coal has reached 9,000,000 B.t.u. per ton, and as much as 10,500,000 is on record over a brief period. Some recent returns furnished privately show that a make of 18,000 cu. ft. of 500 B.t.u. gas is quite practicable.

Evolution of Gas Is Rapid

The explanation is that with such high temperature and a full retort the evolution of gas is rapid and it speedily escapes from the heated zone. The temperature of the gas at the retort outlet is lower than that from a horizontal retort at perhaps one-third less temperature. Its progress is assisted by the admission of an excess of steam, subsequently condensed in the cooling and washing apparatus, which serves the double purpose of a scavenger, driving forward the last traces of gas, and of a pre-

servative, protecting by dilution such substances as higher homologues of the methane and benzene series of hydrocarbons. There is an increased production of ammonia to the tune of 50 per cent, together with the apparently parodoxical result of three times as much tar oil, together with twice as much gas having a very moderately deteriorated quality. As much as 20 gal. of tar per ton has been obtained, of which only 40 per cent was pitch, leaving a residue of 12 gal. of oil. And a liberal estimate under old-fashioned conditions would be 12 gal. per ton, comprising two-thirds pitch and one-third—say 4 gal.—of oil. The prospect of assisting the nation by increased production of oil, and the company by a larger make of gas, is particularly alluring just at present.

An Accepted Axiom Demolished

The accepted axiom that higher yields of gas can only be obtained at the expense of the tar does not apply to these modern processes, which utilize the whole of the volatile matter, together with 5 to 10 per cent of steam. It is generally known that gasworks coke retains obstinately an appreciable quantity of volatile matter, and that if a reliable test is to be made in the laboratory, exposure to a full red heat sufficient to drive off the bulk of volatile matter is not enough and that the last traces can only be taken out by the higher heat of a burner supplied with air under pressure. The temperature of 1,350 to 1,400 deg. insures a similar result in the bulk, and the volatile matter is practically entirely extracted.

Fifty Per Cent More Ammonia

If the results of old-fashioned hand stoking in horizontal retorts are taken as unity, the modern processes show twice the weight of gas and of tar and 50 per cent more ammonia. The volatile matter is increased at the expense of the coke, directly in the retort and indirectly in the retort and boiler furnaces. Against this the larger production per unit of time and space reduces the incidental losses due to radiation and convection from the exterior of the setting. The following table illustrates the leading points:

PER TON OF 2,000 LB.

	Hand-Stoked Horizontal—No Steam	Vertical Retorts with Steam
Gas	2.75 cwt.	5.50 cwt.
Tar	1.00 cwt.	2.00 cwt.
Virgin liquor	1.00 cwt.	Doubtful
Coke	14.75 cwt.	13.50 cwt.
Impurities and loss	0.50 cwt.	0.25 cwt.
	20.00 cwt,	21.25 cwt.

The additional 1.25 cwt. in the second case represents 6.25 per cent of steam; and the probability is that little if any of the water given off by the coal in the retort escapes decomposition, and that the 10 or 12 gal. per ton that in the first case escape with the gases from the retort are converted into blue gas in the second.

Labor Saving

The advantages secured in the way of saving of labor, of capital outlay, and wear and tear by such large makes are obvious. And I should add that the example of horizontal working refers to the old-fashioned style that was in vogue for thirty years or so after the introduction of the regenerator furnace. Improved results have not been confined to "verticals"; but, with the supply of more refractory material, heavier charges and higher temperatures are also applicable to "horizontals." But under any conditions of working they cannot afford the same facilities for steaming as verticals.

Many workers have been concerned in the steady progress that has led up to these satisfactory results. Of these, it will not be invidious to mention Thomas Settle, of Leeds, who to personal knowledge of the writer has for the last fifteen years devoted not only the whole of his working days but also many nights to the subject of carbonization. The council of the Gas Institute has recently recognized the value of his services to the industry in general by electing him as an honorary member.

Can Make Light and Heat from Hydroelectric Power, But It Requires Petroleum to Grease the Bearings

Petroleum is a priceless resource, for it can never be replaced. Trees can be grown again upon the soil from which they have been taken. But how can petroleum be produced? It has taken the ages for nature to distill it in her subterranean laboratory. We do not even know her process. We may find a substitute for it, but have not yet. It is practically the one lubricant of the world to-day. Not a railroad wheel turns without its way being smoothed by it. We can make light and heat by hydroelectric power, but the great turbines move on bearings that are smothered in petroleum. From it we get the quick-exploding gas which is to the motor and the airship what air is to the human body. To industry, agriculture, commerce, and the pleasures of life petroleum is now essential.—*Franklin K. Lane.*

J. G. Fisher, superintendent of the Drumright division of the Oklahoma Gas & Electric Company, has joined the United States Army, and is now in training at Camp Pike, Ark.

Leon Burdick, of the Consumers Gas Company, Miami, Okla., was called to the National Army Sept. 6.

Sergeant Grover C. Lee, formerly of the oil production department in Bartlesville, Okla., is now in training at the Student Soldiers' Training School, Lawrence, Kan.

C. W. Heering, formerly clerk of the Empire Pipe Line Company in the Ponca City, Okla., office, went to Camp Oglethorpe, Sept. 9, where he will enter special work in the Signal Corps.

Paul L. Wrigley, formerly accountant for the Dominion Gas Company, Buffalo, N. Y., is now with the National Army, stationed at Camp Dix, Wrightstown, N. J.

Gas in the Chemical and Associated Industries

By Its Very Nature Chemistry Almost Spells Heat—Remarkable Development of Industry Warrants Careful Consideration of Its Possibilities for the Gas Man

By GILBERT C. SHADWELL

It may be doubted if any American industry ever made such gigantic strides as those accomplished and still being accomplished by the chemical business to-day. Yet it is one which has received, perhaps, the most scanty attention by the gas man who would wish to help along both himself and that work.

By its very nature chemistry almost spells heat. There is scarcely a reaction that can be performed without the aid of heat in some form or another, and gas is indeed the logical fuel, whether burned at the rate of one-tenth of a cubic foot an hour or at the rate of several thousands of cubic feet an hour. The reason is not a difficult matter. Most chemical processes require a great flexibility of control. The factor of exact temperature is one of foremost importance, and there can be no place for dust, dirt or ashes in a chemical factory, however much such a place may look like a junkshop to those who have graced such locations with their presence.

Before going any further into the essential forms of gas heat, let us consider what the subject is and what its demands are.

Chemistry is a national science which has for its province the study and utilization of the composition of substances.

In common with physics it includes the determination of properties or characters which serve to distinguish one substance from another, but while the physicist is concerned with properties possessed by all substances and with processes in which the molecules remain intact, the chemist is restricted to those processes in which the molecules undergo some change. For example, the physicist determines the density, elasticity, hardness, electrical and thermal conductivity, thermal expansion, etc.; the chemist, on the other hand, investigates changes in composition, such as may be effected by an electric current, by heat, or when two or more substances are mixed. A further differentiation of the provinces of chemistry and physics is shown by the classifications of matter. To the physicist matter is presented in three leading forms—solids, liquids and gases; and although further subdivisions have been rendered necessary with the growth of knowledge, the same principle is retained, namely, a classification based on properties having no relation to composition. The fundamental chemical classification of matter, on the other hand, recognizes two groups of substances, namely, elements, which are substances not admitting of analysis into other substances, and compounds, which do admit of analysis into simpler substances, and also of synthesis from simpler substances. Chemistry and physics, however, meet on common ground in a well-defined branch of science, named physical chemistry, which is primarily concerned with the correlation of physical properties and chemical composition, and, more generally, with the elucidation of natural phenomena on the molecular theory.

Chemistry as such is divided into two great classifications which, from the gas man's standpoint, should be particularly noted. These are inorganic chemistry and organic chemistry.

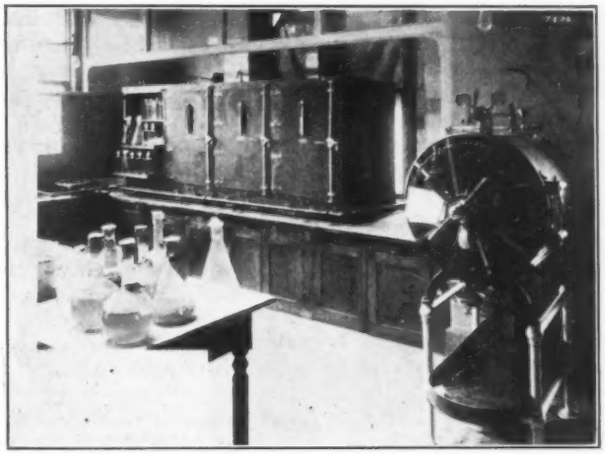

FIG. 1—WELL-EQUIPPED LABORATORY IN WHICH GAS EQUIPMENT IS IMPORTANT FEATURE

While inorganic chemistry was primarily developed through the study of minerals—a connection still shown by the French appellation "chimie minerale"—organic chemistry owes its origin to the investigation of substances occurring in the vegetable and animal organism.

Organic chemistry to-day embraces all compounds which include carbon in their composition. Of these, there are many hundreds which are well known and scores of others less familiar. Not a year goes by without others of vast commercial value being discovered and utilized, so that for the gas man organic chemistry has, perhaps, his chief field.

Unfamiliarity of Gas Man with Chemical Subjects

Due to unfamiliarity with chemical subjects, many gas men have been satisfied to supply just that burner or appliance which has appeared to satisfy its requirements explained by the chemical manufacturer, but the writer hopes to show that with a little more knowledge of the few of the hundreds of operations involved or somewhat better appreciation of the demands to be met will be found and thus install those equipments which will not only bring about satisfaction from the chemist's point of view, but also such a utilization efficiency as will save and not waste the gas used. The chemical industries are on the priority list and gas must be supplied to them. Let us then be sure we give them the best equipments and burners for the work in hand; for, however much a chemist might resent the statement, it is a fact brought out by the writer's visits to chemical factories that that industry needs a strong guiding hand in efficiency in every way, from business principles to the correct utilization of appliances.

FIG. 2

Just one point more in this rather lengthy digression. The average chemical plant in the present time of war may obtain an order to produce certain chemical products in a limited time. He may spend several days in devising means for making the substance or substances. Perhaps he will then order some kind of a kettle, an autoclave, tank or other vessel. He may even build his furnace jacket and install other accessories, but the real and vital problem, that of supplying heat, will be left to the last. Every gas man who has tried to serve a chemical factory knows that this is no exaggeration. The writer can call to mind several instances where a chemical concern required a burner equipment to consume from 1 to 5,000 cu. ft. of gas per hour in less than a week. Moreover, the gas appliance manufacturer, who readily will appreciate what this means, can support the writer's motives in wishing to inform the gas industry of the waste of gas which is likely to accrue if indiscriminate use is made of gas without due regard to the definite means of accomplishing the ends in view.

Appliances Used

Regarding the types and kinds of gas-heated appliances and equipments used in the chemical industry, a whole volume could be written, but a few taken at random will suffice at this point. These and others will be considered at greater length when the operations to be performed are considered.

Among the more important equipments from the gas man's standpoint are:

1. Burners of all kinds.
2. Thermometers, pyrometers, thermostatic devices, etc.
3. Industrial stoves, heating stoves, hot plates, etc.
4. Copper pots, kettles, etc.
5. Soft metal furnaces, fusing tanks, galvanizing, tinning and other furnaces.
6. Boiling kettles and tanks.
7. Cauldron furnaces and kettles which may be
   - (a) Direct heated.
   - (b) Steam jacketed
     - (1) Steam supplied by steam boiler, steam generator, or
     - (2) The self-generation of steam in the jacket.
   - (c) Water jacketed.
   - (d) Sand jacketed (sand bath).
   - (e) Lead bath.
   - (f) Oil jacketed (oil bath).
   - (g) Oil circulation (with oil circulating heater).
8. Agitators, scrapers, stirrers, etc., for cauldron furnaces, etc.
9. Fusion kettles, soda kettles, etc.
10. Evaporating kettles, tanks, etc.
11. Concentrating kettles.
12. Tank furnaces.
13. High temperature furnaces such as muffle furnaces, oven furnaces, etc., for cupelling, scorifying, etc.
14. Nitrating kettles.
15. Blow-torch and blow-pipe equipments for reducing work.
16. Blow pipes for sealing tubes, etc.
17. Steam generation and steam boilers for heating, moistening, etc.
18. Kilns for drying, baking, oxidizing, etc.
19. Blowers for use with burners, blow pipes, supplying air and gases, etc.
20. Ovens for warming, drying, baking, etc.
21. Air heaters for drying, subliming, etc.
22. Radiators for heating, warming, closets, etc.

FIG. 3

Laboratory Works

The mention of a chemical laboratory conjures up visions of a multitude of kettles filled with reagents, salts and chemical compounds of all kinds, benches, "stink chambers," sinks, filter pumps, furnaces and burners galore, and a host of less interesting but nevertheless important paraphernalia.

Range of the Field

That is the vision of a general experimental laboratory —perhaps in a college or polytechnical institute. That of a specialized chemical industry embraces far wider fields of experimentation. And a glance at any suitable commercial register will give us an idea as to the enormous number of industries operating laboratories which have chemical products or by-products as their reason for chemical laboratory apparatus.

Paper manufacturers, makers of fertilizer, packers, brewers, varnish and paint manufacturers, photographic, ink, optical goods manufacturers. These are just a few of the scores of industries the larger factories of which maintain laboratories on the widest sense, and who have need of industrial gas equipments and burners, and who will welcome the gas man's aid in suggesting the best and efficient means of adapting them.

The writer would not wish to attempt to outline even concisely those of the laboratory operations involving gas heat, but a general rough classification can be given as follows:

1. Bunsen burners for heating crucibles, evaporating dishes, etc.
2. Muffle furnaces for reducing oxides.
3. Blow pipes for reducing or oxidizing various compounds.
4. Boiling stoves for evaporating, etc.
5. Drying ovens.
6. Sterilizers, etc.
7. Miscellaneous burners and appliances.

Fig. 1 shows part of a well-equipped laboratory supplied with gas, the chief feature of which is a group of four gas-operated ovens used for bacteriological work. Any such laboratory requires a number of Bunsen burners, such as is shown in Fig. 2, equipped with suitable tops of the tripod (Fig. 3) or ring types. These tops are used to support porcelain dishes, crucibles, etc., although direct heat is not often applied. It has been found that the use of a sheet of wire gauze under the crucible, or as an alternative a sand bath or water bath (depending on the temperatures required), is the best means of applying the heat.

These Bunsen burners are of relatively small size and consequently consume little gas, but they provide a steady all-year load, which is important from the gas company's standpoint.

FIG. 4

Larger quantities of liquids which have to be evaporated in order to obtain the solid matter which is in solution naturally requires burners having higher gas consumption, and for this work what are known as an Urn burner (Fig. 4) or a small Cyclone burner (Fig. 5) are often employed, the latter employing a stand which provides convenient gas connection.

For even larger vessels a special type of stove is constructed such as that shown in Fig. 6. Here the burners are conveniently situated in a sheet steel jacket mounted on legs so that the top grids on which the vessels are rested are at a convenient working height.

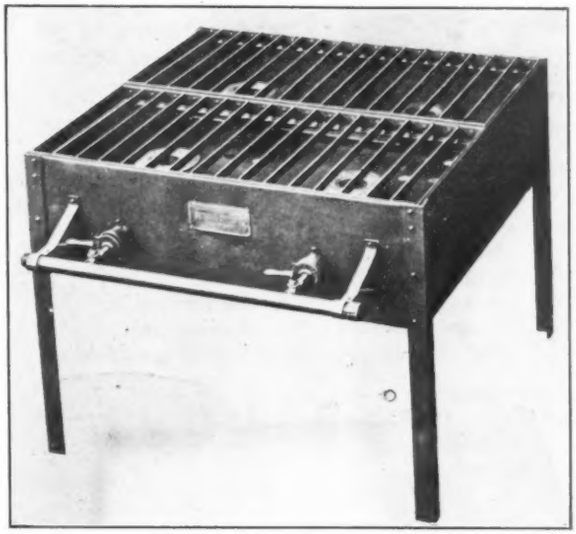

FIG. 6—SPECIAL TYPE OF STOVE CONSTRUCTED FOR LABORATORY WORK

The work carried out on such a stove includes evaporation, mixing, crystallization and all other heating operations, including dissolving and the supply of the necessary heat to carry out various chemical reductions, etc.

Where there is only one vessel to be heated at a time, a utility stove or burner (Fig. 7) is used. It is a very useful burner in the laboratory, workshop, etc., for heating glue, water, wax, etc. Burner is cored, with cast brackets for vessel supports.

It sometimes happens that due to the shape of the vessel to be heated there is not the best of conditions for supply of secondary air to the burner. In such cases the burners of the Star types (Fig. 8 and 9) can be usefully employed.

The gas consumptions of all of the above mentioned burners vary very little, the average being about 10 or 15 cu. ft. per hour. They all therefore are capable of performing approximately the same amount of work—whether evaporation, concentration, distillation or otherwise—but the gas man will welcome the opportunity to familiarize himself with the various types so that the burner most applicable to the work in hand may be employed.

After having heated any materials to the requisite temperature it often becomes necessary to reduce the gas consumption to very narrow limits, and if it is already low they may be difficult to attain without the burner "backfiring" and causing the flame to burn in the narrow pipe. This calls for a special burner known as a gauze burner (Fig. 10.) It consists of the usual cock, mixer, mixer pipe and head, but the latter carries several layers of heavy steel or other wire gauge which dissipates the heat readily and does not easily permit the gas and air mixture beneath it to reach the temperature necessary to effect combustion; as a result the flame must continue to burn at the outside of the gauze.

FIG. 5

Some of the Appliances Used in the Chemical Industry and Their Nature

From what we have seen of processes carried out in the laboratory, it will be readily appreciated that much of the work which has to be performed has to be carried out in kettles. It used to be a practice of some chemical houses merely to set a kettle in a brick furnace and apply heat underneath it without any regard to the efficiency of the apparatus. That this was a mistake is, of course, quite evident, and almost every chemical house now appreciates the value of a good cauldron furnace properly designed.

Fig. 11 shows a cauldron furnace of a standard type where practical details have been brought to a proper degree of development. Briefly, the furnace consists of a kettle which is mounted inside a steel jacket, which latter is insulated with asbestos or sometimes with firebrick. The functions of this installation are, firstly, to conserve the heat and, secondly, to guide the hot flue gases up the sides of the kettle. It is very desirable to prevent the flue gases passing straight out directly through the flue, and it is therefore good practice to install a flange at the flue outlet so as to compel the heat of the flame to rise evenly around all sides of the kettle, in order to economize gas and insure even heat. It will be seen that there is a door of suitable dimensions which gives convenient access to the burner and prevents an excess of secondary air passing up the sides of the kettle, which have a tendency to cool it.

The type of burner used under a kettle of this character is shown in Fig. 12, which indicates a burner having three rings with a total gas consumption of some 270 cu. ft. per hour. Burners of this type are especially designed to consume the maximum amount of gas in a relatively small area with a high efficiency, but a burner of this type to be effective should be properly proportioned and cored. It is important to remember that these burners are, at times, sub-

FIG. 7

FIG. 8

FIG. 9

jected to intense heat, and if the reflected heat from the kettle back to the burner is very great, and there is not sufficient capacity in the rings to take up the expansion of the mixture, there will be a back pressure which will tend to make the flames burn yellow. There are cases occurring every day where the temperature in the kettles is quite high, and where the reflected heat is an item to be very carefully considered. In such events it is desirable to employ burners of the multitube type. One of these burners is shown in Fig. 13. These burners are similar to that shown in Fig. 12, except that in place of drilled ports steel tubes are employed. Owing to their construction, perfect combustion and a very high efficiency are the result.

FIG. 11—CAULDRON FURNACE OF STANDARD TYPE

A perfect supply of secondary air is given to each flame and the castings cannot become overheated, owing to the fact that the heat downwards is diffused to a large extent by means of the tubes. Moreover, the tubes and the heads are cooled to a further extent by means of the cold air passing up and around them.

Floating Flames

These burners can never have any tendency for the flames to "float." Moreover, these burners can be placed closer to the vessels than the drilled type shown in Fig. 12, and they will be found to have a much longer life. Should they be subjected to extremely heavy work, and the tubes be found to cause the flames to burn yellow after a year or two, a punch driven down into the tube will immediately remedy the trouble and give them another lease of life for a similar period, which may be extended almost without limit.

The arrangement of the burners under various kettles means the employment of considerable thought and care to make it certain that the conditions regarding the supply of secondary air are absolutely satisfactory.

FIG. 10

In order to give some idea of the usefulness of employing multitube burners in difficult locations, reference is directed to Fig. 14. This burner will be seen to be made up of fourteen tee burner heads into which steel tubes have been placed and the whole equipment is controlled by three mixers. It will be readily understood and appreciated that a burner of this character is quite valuable for use under a flat-bottomed pot, and especially so where the temperature may be somewhat high.

Fig. 15 will give readers a very good idea as to the various accessories which are sometimes included in an installation of a cauldron furnace in a chemical factory. This figure shows a composite illustration of the standard type cauldron furnace which has the following accessories:

1. Hand-operated agitator.
2. Hand-operated pump.
3. Molasses gate outlet on the right side.
4. Bib cock outlet on the left side, and
5. Heated drain tapped off burner manifold.

FIG. 12—GAS CONSUMPTION WITH THIS TYPE OF BURNER 270 CU. FT. PER MINUTE

It sometimes happens that the contents which have to be agitated or stirred are to be kept in an enclosed kettle with a tight cover or lid. A view of this equipment is shown in Fig. 16. It will be seen that a shaft carrying a pulley or sprocket wheel is connected by means of a bevel gearing to an upright shaft, which carries the agitator at the lower end. To give some idea as to the size of these kettles, it may be mentioned that they are employed almost all the way from 10 up to 1,000 or more gallons.

Chemicals Treated

Among the chemicals treated in such furnaces, we may include aniline oils, caustics, organic acids (which

FIG. 13—BURNER OF MULTITUBE TYPE FOUND VERY EFFECTIVE IN LABORATORY WORK

are sometimes crystallized to solids, *e.g.*, oxalic acid, citric acid, benzoic acid, etc.).

The point to be noted between Fig. 15 and another type is that the former has paddle blades of the screw type whereas others have blades of the scraper type,

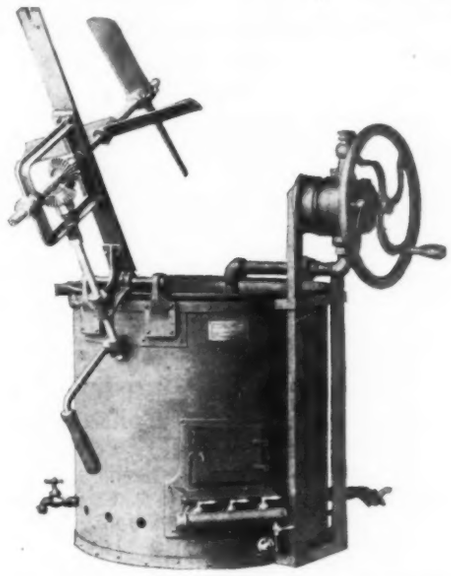

FIG 15—CAULDRON FURNACE AND ACCESSORIES

which scrape the sides of the kettle as well as serving to mix the contents.

Considerable care should be taken by gas men to see that the correct style and shape of agitator is employed, because it must not be forgotten that some chemical substances, such as sodium hydroxide and other caustics, are fused in the kettles themselves, so that the residual solid has to be broken up in order to be taken

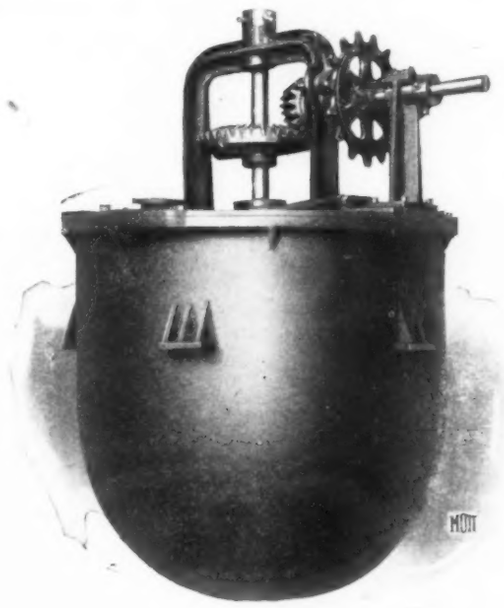

FIG. 16—TYPE OF INSTALLATION USED WHERE CONTENTS HAVE TO BE STIRRED

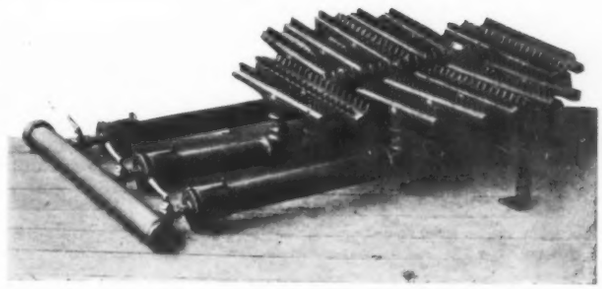

FIG. 14—THIS MULTITUBE BURNER MADE UP OF FOURTEEN TEE BURNER HEADS

out from the kettle for any further treatment or refining that may be necessary.

In such cases it is usually necessary to have the lower part of the shaft mounted in a step bearing to give sufficient hold so that the shaft will not bend or break.

In some cases it is a difficult matter to supply the heat satisfactorily directly, and a jacketed kettle has to be employed.

These jacketed kettles may be jacketed either with water, oil, steam, sand, lead or other substances.

The object of jacketing the kettles is to provide an even temperature which will be suitably constant throughout the whole operation. From the above it will be seen that the chemical business, whether large or small, provides a very valuable field for the gas man's ingenuity, and it is hoped in a later article to outline some of the other adaptations to which gas is a valued factor.

*How Much Is 150,000,000 Tons?

We have been talking and writing very glibly about the enormous amount of fuel wasted in the United States per year, but nobody seems to be much impressed. Tell it to a man and he says, "Gosh, that's a lot," whereas a woman unthinkingly exclaims, "My land sakes! Goodness gracious!" Then they go on their way, everybody feeling better because the matter has at least been discussed, but nobody "does anything about it."

In the hope that a visual quantity will have some effect, the writer sat down the other evening and "studied up" the average values, and learned that a short ton of bituminous coal runs about 38 cu. ft. per ton. That being the case, it is a very simple matter to multiply it by 150,000,000 tons, and we get 5,700,000,000 cu. ft. That looks like a big figure, but figures in themselves don't express much unless we are familiar with their magnitude. So the best way to understand this figure is to extract the cube root, and we get 1,700 ft. In other words, 150,000,000 tons of coal would make a 1,785-ft. cube.

How much is 1,785 ft.? The Eiffel Tower in Paris is 1,000 ft. high. The Woolworth Building is 750 ft. high. Put one on top of the other and you will "nearly" attain the height of this cube of waste coal, and remember that this wasted cube is just as wide and long as it is high. Isn't it a shame that we are wasting so much coal? Shouldn't we look upon it more seriously? Let's "buck up against it" and reduce that waste pile to zero. It "can" be done.

*Copyright, 1918, by W. F. Schaphorst.

PATENTS PERTINENT TO GAS INDUSTRY

A Gas Burner Having a Multiplicity of Mixing Chambers

Patent No. 1,261,418; described in Patent Office *Gazette*, April 2, 1918, page 121. Sebastiano Martoccio, New York, N. Y. Filed March 24, 1917. Serial No. 157,072. (Cl. 158-105.)

This burner comprises a hollow casting in which there are a number of burners, each burner having a separate mixing chamber and separate control. The burner pipes from the mixing chambers are of different height and of different shape. Some extending straight up and some being bent at an angle.

A Rotary Fan Having a Combination of Centrifugal and Propeller Fan Blades

Patent No. 1,261,457; described in Patent Office *Gazette*, April 2, 1918, page 131. Oswald Stott, Birmingham, England. Filed Jan. 22, 1917. Serial No. 143,764. (Cl. 230-11.)

This fan has a runner consisting of a combination of a series of centrifugal fan blades and a series of screw or propeller fan blades. The centrifugal blades are so arranged within and separated from the propeller blades that the air from one set of blades does not pass through or enter the other set.

A Fuel Oil Burner Provided with a Steam Heating Device

Patent No. 1,261,494; described in Patent Office *Gazette*, April 2, 1918, page 142. Charles C. Delacroix, New Orleans, La. Filed Dec. 1, 1917. Serial No. 204,868. (Cl. 158-75.)

This burner has a burner head having a tubular burner extension. At the end of this burner extension there is a conical tip with an upwardly inclined orifice. Inside this burner extension there is a similar but smaller extension carrying steam and having a downwardly inclined orifice at its end. Above and below the steam pipe there are openings through which oil and air can be supplied to the burner.

A Dumping Wheelbarrow

Patent No. 1,261,532; described in Patent Office *Gazette*, April 2, 1918, page 153. Peter D. Hoe, Honolulu, Hawaii. Filed Dec. 19, 1916. Serial No. 137,886. (Cl. 21-68.)

This wheelbarrow has a body hinged to the frame in such a manner that the body can be raised into a dumping position. It also has a spring actuated drum which, through the medium of cables and rollers, automatically brings the body back into position again. Air cushions take up the shock of the body returning to place.

A Gas Retort Charging Apparatus Which Permits the Operator to Open and Close the Retort Lids from the Operating Platform

Patent No. 1,261,699; described in Patent Office *Gazette*, April 2, 1918, page 200. Henry A. Carpenter and Arthur W. Warner, Sewickley, Pa., assignors to Riter-Conley Manufacturing Company, Pittsburgh, Pa., a Corporation of New Jersey. Filed Oct. 20, 1914. Serial No. 869,232. (Cl. 214-23.)

This is a portable charging machine adapted to travel in front of the retorts and has means for introducing charges of coal into the retorts. There are manually operated controllers for directing the movements of the machine, and an operating platform mounted on the portion of the machine facing the retorts and projecting towards the latter to afford the operator located on the platform access to the retort lids for opening and closing them. The manual controls are accessible to the operator from this platform.

A Three Piece Acetylene Torch

Patent No. 1,261,712; described in Patent Office *Gazette*, April 2, 1918, page 203. Orie N. Crispell, Olivebridge, N. Y. Filed May 5, 1917. Serial No. 166,685. (Cl. 158-27.4.)

This torch consists of three parts: a base having gas and air connections from which run passages to a small mixing chamber formed in the base, a nozzle with a flanged base which fits into the mixing chamber of the base, and a threaded collar which fits over the nozzle flange and screws onto the base, thus holding the two firmly together.

A Gas Burner of Very Simple Construction

Patent No. 1,262,014; described in Patent Office *Gazette*, April 9, 1918, page 319 Robert E. Campbell, Berkeley, Cal. Filed Oct. 6, 1916. Serial No. 124,082. (Cl. 158-111.)

The burner tube of this burner is supported by a continuation of the supply pipe which, after passing through the base, forms a gooseneck, which holds the burner tube directly over the orifice in the supply pipe. The supply pipe is held in place in the base by means of a spiral compression spring and a ball.

A Gas Washer Scrubber Provided with a Stationary Mechanical Scrubbing Surface

Patent No. 1,261,106; described in Patent Office *Gazette*, April 2, 1918, page 33. James A. P. Crisfield, Philadelphia, Pa., assignor to the United Gas Improvement Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Sept. 29, 1916. Serial No. 122,818. (Cl. 183-24.)

This gas washer scrubber is designed with a combination of a hydraulic dip valve casing which is internally subdivided so as to constitute communicating gas receiving and discharging chambers and a stationary mechanical scrubbing surface. The chambers are provided with a dip pipe and are adapted to contain a sealing liquid.

A Process of Making Gasoline from Natural Gas

Patent No. 1,260,970; described in Patent Office *Gazette*, March 26, 1918, page 972. Filmoe C. Devericks, Clarksburg, W. Va., assignor of one-half to Lynn S. Hor-

ner, Clarksburg, W. Va. Filed Aug. 3, 1915. Serial No. 43,450. (Cl. 196-25.)

This process consists of condensing casing head natural gas and recovering liquid hydrocarbons of approximately 85 deg. B. gravity. Certain hydrocarbon constituents remaining in the gas are then absorbed and mixed with the first oil. The resultant liquid is a homogeneous blend having a gravity of approximately 70 deg. B.

A Sad Iron Containing a Heat Regulating and Retaining Liquid

Patent No. 1,261,070; described in Patent Office *Gazette*, April 2, 1918, page 23. Philipbus Tufenkgian, Boston, Mass. Filed Oct. 19, 1917. Serial No. 197,419. (Cl. 158-23.1.)

The body of this iron forms a chamber in which liquid is placed. Through this body runs a tubular opening in which the burner is placed. Into the liquid extends a thermometer which enables the operator to know the exact temperature of the iron.

A Gas Purifying Apparatus Having Grids for Supporting the Purifying Material

Patent No. 1,261,767; described in Patent Office *Gazette*, April 9, 1918, page 252. Herbert N. Cheney, Boston, and David S. Reynolds, Brookline, Mass. Filed Feb. 23, 1917. Serial No. 150,361. (Cl. 183-48.)

This purifier has a casing consisting of inclined bottom and top walls and upright side walls. It has a number of tiers of inclined beams substantially parallel with the bottom and the top walls. These beams support grids which in turn support the purifying material and act as a gravity for new material.

Hollow Gas Burners Supported in a Cup Like Device for Use in Directing Heat to the Desired Point

Patent No 1,260,758; described in Patent Office *Gazette*, March 26, 1918, page 916. William S. Davis, Sacramento, Cal., assignor of one-half to Charles E. Emerson, Susanville, Cal. Filed June 11, 1917. Serial No. 174,158. (Cl. 158-28.)

This burner has an outer basket which supports two hollow burners. Around the upper portion of the basket there is a series of air openings and each burner has independent control. One hollow burner is contained inside the other.

Proclamation of the President of the United States in Regard to Labor Adjustments

Whereas, in January, 1918, the Secretary of Labor, upon the nomination of the president of the American Federation of Labor and the president of the National Industrial Conference Board, appointed a War Labor Conference Board for the purpose of devising for the period of the war a method of labor adjustment which would be acceptable to employers and employees, and

Whereas, said board has made a report recommending the creation for the period of the war of a National War Labor Board, with the same number of members as, and to be selected by the same agencies that created, the War Labor Conference Board, whose duty it shall be to adjust labor disputes in the manner specified, and in accordance with certain conditions set forth in the said report; and

Whereas, the Secretary of Labor has, in accordance with the recommendation contained in the report of said War Labor Conference Board dated March 29, 1918, appointed as members of the National War Labor Board Hon. William Osborne, L. F. Loree, W. H. Devoort, C. E. Michael and B. L. Worden, representatives of the employers of the United States, and Messrs. Frank J. Hayes, William L. Hutcheson, William H. Johnston, Victor A. Olander and T. A. Rickert, representatives of the employees of the United States;

Now, therefore, I, Woodrow Wilson, President of the United States of America, do hereby approve and affirm the said appointments and make due proclamation thereof and of the following for the information and guidance of all concerned:

The powers, functions, and duties of the National War Labor Board shall be to settle by mediation and conciliation controversies arising between employers and workers in fields of production necessary for the effective conduct of the war, or in other fields of national activity, delays and obstructions in which might, in the opinion of the National Board, affect detrimentally such production; to provide, by direct appointment, or otherwise, for committees or boards to sit in various parts of the country where controversies arise and secure settlement by local mediation and conciliation; and to summon the parties to controversies for hearing and action by the National Board in event of failure to secure settlement by mediation and conciliation.

The principles to be observed and the methods to be followed by the National Board in exercising such powers and functions and performing such duties shall be those specified in the said report of the War Labor Conference Board dated March 29, 1918, a complete copy of which is hereunto appended.

The National Board shall refuse to take cognizance of a controversy between employer and workers in any field of industrial or other activity where there is by agreement or Federal law a means of settlement which has not been invoked.

And I do hereby urge upon all employers and employees within the United States the necessity of utilizing the means and methods thus provided for the adjustment of all industrial disputes, and request that during the pendency of mediation or arbitration through the said means and methods, there shall be no discontinuance of industrial operations which would result in curtailment of the production of war necessities.

In witness whereof, I have hereunto set my hand and caused the seal of the United States to be affixed.

Done in the District of Columbia, this eighth day of April, in the year of our Lord one thousand nine hundred and eighteen, and of the independence of the United States the one hundred and forty-second.

[SEAL] WOODROW WILSON.

FUNCTIONS, POWERS, AND DUTIES OF THE BOARD

The functions and powers of the National War Labor Board are as follows:

To bring about a settlement, by mediation and conciliation, of every controversy arising between employers and workers in the field of production necessary for the effective conduct of the war.

To do the same thing in similar controversies in other fields of national activity, delays and obstructions in which may, in the opinion of the National Board, affect detrimentally such production.

To provide such machinery, by direct appointment or otherwise, for the selection of committees or boards to sit in various parts of the country where controversies arise, to secure

settlement by local mediation and conciliation.

To summon the parties to the controversy for hearing and action by the National Board in case of failure to secure settlement by local mediation and conciliation.

If the sincere and determined effort of the National Board shall fail to bring about a voluntary settlement and the members of the board shall be unable unanimously to agree upon a decision, then and in that case and only as a last resort an umpire appointed in the manner provided in the next paragraph shall hear and finally decide the controversy under simple rules of procedure prescribed by the National Board.

The members of the National Board shall choose the umpire by unanimous vote. Failing such choice, the name of the umpire shall be drawn by lot from a list of ten suitable and disinterested persons to be nominated for the purpose by the President of the United States.

The National Board shall hold its regular meetings in the city of Washington, with power to meet at any other place convenient for the board and the occasion.

The National Board may alter its methods and practice in settlement of controversies hereunder from time to time as experience may suggest.

The National Board shall refuse to take cognizance of a controversy between employer and workers in any field of industrial or other activity where there is by agreement or Federal law a means of settlement which has not been invoked.

The place of each member of the National Board unavoidably detained from attending one or more of its sessions may be filled by a substitute to be named by such member as his regular substitute. The substitute shall have the same representative character as his principal.

The National Board shall have power to appoint a secretary and to create such other clerical organization under it as may be in its judgment necessary for the discharge of its duties.

The National Board may apply to the Secretary of Labor for authority to use the machinery of the department in its work of conciliation and mediation.

The action of the National Board may be invoked, in respect to controversies within its jurisdiction, by the Secretary of Labor or by either side in a controversy or its duly authorized representative. The board, after summary consideration, may refuse further hearing if the case is not of such character or importance as to justify it.

In the appointment of committees of its own members to act for the board in general or local matters, and in the creation of local committees, the employers and the workers shall be equally represented.

The representatives of the public in the board shall preside alternately at successive sessions of the board or as agreed upon.

The board in its mediating and conciliatory action, and the umpire in his consideration of a controversy, shall be governed by the following principles:

Principles and Policies to Govern Relations Between Workers and Employers in War Industries for the Duration of the War

There should be no strikes or lockouts during the war.

RIGHT TO ORGANIZE

The right of workers to organize in trade unions and to bargain collectively through chosen representatives is recognized and affirmed. This right shall not be denied, abridged, or interfered with by the employers in any manner whatsoever.

The right of employers to organize in associations or groups and to bargain collectively through chosen representatives is recognized and affirmed. This right shall not be denied, abridged, or interfered with by the workers in any manner whatsoever.

Employers should not discharge workers for membership in trade unions, nor for legitimate trade union activities.

The workers, in the exercise of their right to organize, should not use coercive measures of any kind to induce persons to join their organizations nor to induce employers to bargain or deal therewith.

EXISTING CONDITIONS

In establishments where the union shop exists the same shall continue, and the union standard as to wages, hours of labor, and other conditions of employment shall be maintained.

In establishments where union and non-union men and women now work together and the employer meets only with employees or representatives engaged in said establishments, the continuance of such conditions shall not be deemed a grievance. This declaration, however, is not intended in any manner to deny the right or discourage the practice of the formation of labor unions or the joining of the same by the workers in said establishments, as guaranteed in the preceding section, nor to prevent the War Labor Board from urging or any umpire from granting, under the machinery herein provided, improvement of their situation in the matter of wages, hours of labor, or other conditions as shall be found desirable from time to time.

Established safeguards and regulations for the protection of the health and safety of workers shall not be relaxed.

WOMEN IN INDUSTRY

If it shall become necessary to employ women on work ordinarily performed by men, they must be allowed equal pay for equal work and must not be allotted tasks disproportionate to their strength.

HOURS OF LABOR

The basic eight-hour day is recognized as applying in all cases in which existing law requires it. In all other cases the question of hours of labor shall be settled with due regard to governmental necessities and the welfare, health, and proper comfort of the workers.

MAXIMUM PRODUCTION

The maximum production of all war industries should be maintained and methods of work and operation on the part of employers or workers which operate to delay or limit production, or which have a tendency to artificially increase the cost thereof, should be discouraged.

MOBILIZATION OF LABOR

For the purpose of mobilizing the labor supply with a view to its rapid and effective distribution, a permanent list of the numbers of skilled and other workers available in different parts of the country shall be kept on file by the Department of Labor, the information to be constantly furnished--

1. By the trade unions.
2. By State employment bureaus and Federal agencies of like character.
3. By the managers and operators of industrial establishments throughout the country.

These agencies shall be given opportunity to aid in the distribution of labor as necessity demands.

CUSTOM OF LOCALITIES

In fixing wages, hours, and conditions of labor, regard should always be had to the labor standards, wage scales, and other conditions prevailing in the localities affected.

THE LIVING WAGE

1. The right of all workers, including common laborers, to a living wage is hereby declared.
2. In fixing wages, minimum rates of pay shall be established which will insure the subsistence of the worker and his family in health and reasonable comfort.

METHOD OF PRESENTING COMPLAINTS AND PROCEDURE OF BOARD

Any person desiring to bring before the National War Labor Board an issue between employer and employees, of which the board has cognizance, shall deliver to the secretary of the board a written statement, signed by him, with his proper post-office address at his home and in Washington. The statement shall contain a brief description of the grievance and the names of the persons or corporations against whom he complains, with their post-office address.

Where an employer and employees both desire to submit a controversy to the board they shall sign a short joint statement of the issue between them, with their respective post-office addresses, and request the action of the board. They shall deliver this signed statement to the secretary of the board.

All documents in controversies in which the Secretary of Labor invokes the action of the board shall be delivered to the secretary of the board. Such complaints, submissions, and references by the Secretary of Labor shall be received by the secretary of the board and filed in his office, and indorsed with the date of filing.

The secretary of the board shall keep one docket for the filing of all complaints, submissions, and references, and shall number them on the docket in the order in which they are received and filed. Thereafter the cases shall be referred to by such numbers.

Where the complaint or submission filed shall show clearly that another board than this has primary jurisdiction therein, the secretary is authorized to direct the proper reference, and to advise the party or parties initiating the proceeding of such reference. At the next session of the board the secretary shall advise the board of his disposition thereof.

The secretary of the board shall digest all cases presented and bring them to the prompt attention of the board for its action.

ORGANIZATION OF THE BOARD FOR HEARINGS AND ADJUSTMENTS

In respect to every local controversy, two members of the board, one from the employers' side and one from the employees' side, shall be appointed to act for the board, the members to be named by the joint chairman at the instance of the respective groups of the board. These members shall be called a section of the board, and shall hear and adjust cases assigned to them. If they cannot effect any adjustment, they shall summarize and analyze the facts and present the same to the board with their recommendations.

The National Board may appoint permanent local committees in any city or district to act in cases there arising. In the selection of such local committees, recommendations will be received by the National Board from associations of employers and from the central labor body of the city or district and other properly interested groups. Sections of the board are authorized to appoint temporary local committees where permanent local committees have not been appointed by the board.

ARBITRATION

When the board, after due effort of its own, through sections, local committees, or otherwise, finds it impossible to settle a controversy, the board shall then sit as a board of arbitration, decide the controversy, and make an award, if it can reach a unanimous conclusion. If it cannot do this, then it shall select an umpire, as provided, who shall sit with the board, review the issues, and render his award.

CO-ORDINATION OF THE WORK OF EXISTING BOARDS

To comply with the direction of the President in his proclamation of April 8, 1918, constituting the National War Labor Board, this board will hear appeals in the following cases:

Where the principles established by the President in such proclamation have been violated.

Where an award made by a board has not been put into effect by employers, or where the employees have refused to accept or abide by such award.

To determine questions of jurisdiction as between Government boards.

Appeals will not be heard by the National War Labor Board from the decisions of regularly constituted boards of appeal nor from any other board to revise findings of fact.

RESOLUTION ADOPTED BY NATIONAL WAR LABOR BOARD JULY 31, 1918

Resolved, That the National War Labor Board deems it an appropriate time to invite the attention of employers and workers alike to the wisdom of composing their differences in accord with the principles governing the National War Labor Board, which were approved and promulgated by the President in his proclamation of April 8, 1918;

That this war is not only a war of arms, but also a war of workshops; a competition in the quantitative production and distribution of munitions and war supplies, a contest in industrial resourcefulness and energy;

That the period of the war is not a normal period of industrial expansion from which the employer should expect unusual profits or the employees abnormal wages; that it is an interregnum in which industry is pursued only for common cause and common ends;

That capital should have only such reasonable returns as will assure its use for the world's and nation's cause, while the physical well-being of labor and its physical and mental effectiveness in a comfort reasonable in view of the exigencies of the war should likewise be assured;

That this board should be careful in its conclusions not to make orders in this interregnum, based on ap-

(*Continued on page* 284)

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A Real Advantage Oftentimes Purposely Concealed

The AMERICAN GAS ENGINEERING JOURNAL before this country's entrance into the world war was even thought of advocated including its heat-producing qualities as one of the selling points of gas lighting, instead of evading this issue purposely, as many were accustomed to.

In the winter, it was pointed out, this heat, though of course it would not be sufficient to do much in extreme weather, would help out and reduce to a certain amount the coal necessary to heat the home. In the summer it would not be objectionable in that windows are then open top and bottom, and the heat from the gas lights would usually be well above even those standing. Thus it would escape through the upper levels without appreciably molesting those in what might be termed the living zone. Indeed, on especially still days the heat from the gas lamps might even be an advantage in the way of creating air currents.

We were interested, therefore, in noting among some coal conservation hints published in the *Newark* (N. J.) *News*, and presumably inspired by the National Fuel Administration, following a suggestion to use gas for cooking and heating, the thought advanced that "Gas lighting at night aids in heating the home, stores and the building where used."

Thus the National Fuel Administrator in the effort to best achieve his great purpose—coal conservation to the last degree—again steps forward as the most effective booster of gas who has come to the fore in a generation.

Some gas companies, and perhaps a good many electric companies and combination companies, might rather wish he had given less publicity to some of his suggestions, but the great value they have in the way of effect on the public is in their drastic disregard of all selfish or mistaken notions some managements might cherish. This gives them the ring of sincerity, of rigid non-partisanship in the effort to do a job well without regard to whose toes are stepped upon. And these things count.

We do not believe, however; cannot believe, that any gas company, combination company or electric company would intentionally, because its fancied best interests are hurt by some of the National Fuel Administration's suggestions, be the less energetic therefore in helping it to have its requests followed.

The Fuel Administration asks the public to cook with gas and to heat with gas. It is the national duty, therefore, of every gas company and every combination company to facilitate their doing so; to drive home the clincher, so to speak. It is the national duty of every electric company to place no obstacle in the way of their so doing.

The Fuel Administration evidently considers gas lighting advantageous in the way of supplying a proportion of the demand for space heating, thus lessening the draft on the coal pile. It is, therefore, the national duty of every gas company and every combination company to push the Fuel Administration's request home to their utmost powers. It is, likewise, in this case, the national duty of every electric company to place no obstacle in the way of their so doing.

This means on the part of gas companies and combination companies energetic merchandising. It means providing and selling gas space heaters, gas cooking ranges, and gas-mantle lamps, and providing the gas to meet their demand. It means on the part of the electric companies a temporay "grin-and-bear-it" attitude.

With the echoes of St. Mihiel still reverberating gloriously all about us, with the end of the great task in sight, this is no time to swing back in our swivel chairs and count on our fingers how much each additional cubic foot of gas we send out increases our losses and adds to our perplexities. It is a time for service, self-sacrificing service and hard effort that we may not be lacking in one iota in the amount we may contribute to the attainment of victory. That accomplished, there will be time aplenty to revert to fighting tooth and nail for selfish ends and the prevalence of our own deep-seated notions.

Temporarily Halted

Temporarily we have ceased from merchandising gas for the mere purpose of selling. We still have our commercial organizations and we still buy and sell appliances. But we no longer have the perspective of yesterday.

When we sell gas now it is not primarily to enlarge our business. It is to discharge our obligation to public service, to give us a bigger opportunity to produce light oils or to save coal.

We do not seek the sale of a gas space heater, for instance, in order that we may reap the proportion of profit that the appliance itself represents or in order that we may increase profits by selling more gas.

We sell that space heater because we know that we have contributed to the war effort in that some small proportion of the country's population is thereby being assured comfort and well-being, and is guarded against the temptation to war weariness through feeling too constantly the privations that the war effort entails, and because we know that to assure this comfort and well-being by this means costs a lesser expenditure of the country's immediate coal resources.

Behind every sale there is, or should be, a purpose. Mere selling for the sake of selling, as in times past, is an abnormality; an offense against good taste.

The whole country, insofar as relates to anything not immediately concerned with the prompt winning of the war, is at a standstill. All other activities are temporarily halted. We are beset with a great sore. For the time being we must divert from our customary activities to rid ourselves of it.

Thus anyone who suggests for the gas industry expansion at the present time for the mere sake of expansion is preaching a harmful doctrine; one that not only may result disastrously for the gas industry, but be appreciably harmful to the national war effort as well.

Certificates of Good Citizenship

The Civil War veterans were still in their prime when we were young. And that war engaged a large proportion of the man-power of the country, though not as great a proportion as this war will.

The boys of our days looked askance at those in whose homes a frame of medals on the wall, a rusty black slouch hat, a faded uniform, a rusted weapon or some other relic did not certify to active participation. Sectional feeling had not subsided in the haunts of our youth. A Confederate was not seen in the perspective we see him to-day. Yet even the standing of the Confederate was higher in our eyes than that of the Northerner who did not go, and who had to shift his eyes when he explained why.

Those of us who remain at home in this war feel that there is our place. Otherwise we undoubtedly could not fail to go.

Those who have gone are of matured mind. They understand and do not begrudge us our immunity.

But it is minds that have not yet begun to think concisely that will determine our status in the community in the future. Let us make sure that we do not so comport ourselves as to leave in the thoughts of these judges of the future that in this time of world travail we not only escaped bodily peril, but inconvenience, discomforts and privations as well.

The best certificate of good citizenship we can imagine men of our status can provide ourselves with is Liberty Bonds, and in amounts that can leave no doubt that the period of the war did not pass us unscathed and uninconvenienced.

These are times of high living costs. History will record such a fact. The strain on the income of an eighteen-hundred-dollar-a-year man with a family is most intense. Should the end of the war find such a man with five or six hundred dollars' worth of Liberty Bonds in his possession, together with receipts for charitable contributions in proportion to his means, there can exist no doubt that the war meant something to him.

and that something was not altogether pleasant. It would indicate deprivation, drastic self-denial and rigid economy. There could be little thought of very considerable sums spent on self-gratification and amusements. Liberty Loan Bonds in this proportion or larger would be proof beyond question that, though the United States Government considered this man more effectively placed at home than in the fighting ranks, the man did not regard his immunity as a privilege, but as an opportunity for service without stint.

A Fourth Liberty Loan is forthcoming shortly. There can be no doubt that it will be fully subscribed. Perhaps, due to the enthusiasm created by the uninterrupted string of victories, it may be vastly oversubscribed. The average citizen at home should make sure by early subscription that he does get as great or greater share of this issue as he did of the three preceding.

Providing the Gas Will Not Be a Case of Volition, But Necessity

Gas companies exist essentially to provide gas sufficient for the legitimate needs of their territories. They do not exist to enable certain officials to try out theories of management or economies, and they do not exist primarily to pay dividends to stockholders, though this latter is essential to attract capital to build them and to keep them maintained to the point of being able to adequately meet the demands put upon them for service.

Some managements last year apparently got erroneous ideas into their heads as to the reason for the existence of their companies. They got a notion that they could control demand by refusing to sell appliances. The outcome was a fiasco.

The general user of gas has a right to use just as much gas as his legitimate needs require. It requires more than the mandate of the gas company to curtail his consumption. This can only be done by popularly elected or appointed officials, who are but the public's representatives and spokesmen.

Those companies which adopted the mistaken course alluded to accomplished an end they did not care to attain, and reaped thereby no compensating benefit. They brought ill repute and ill will to their respective companies, and they did not curtail the use of gas.

There is only one means of coping with the constantly augmenting excessive demand for gas that we may expect to encounter throughout the duration of the war, and perhaps after. That is to prepare to meet and provide for it.

Demands for service must be met. And these demands will increase. We have before us a list of suggestions made to the Federal Fuel Administrator by Travis H Whitney, a member of the Public Service Commission, First District, New York State. He says:

> "That if oil and coal conservation be important the Fuel Administration take steps to extend the use of gas instead of coal for domestic purposes, as coal and oil can be most efficiently used for production of gas, which is more easily distributed than coal. Furthermore, gas is frequently the only fuel obtainable by many people and an extension of its use would relieve the railroads of transporting coal for domestic use."

Dr. Garfield has already indicated that he is by no means ignorant of this means of saving coal. But there are more ways than one of accomplishing a given end. A means that is most apt to fail in a democracy is by autocratic mandate to seek to disturb the household arrangements of hundreds of thousands of people and occasion them considerable expense. The Fuel Administration method is slower but more apt to prove successful. It has been unremitting in its efforts to make the public to visualize the gravity of the fuel situation. Then it gently requests it to "use gas wherever possible, instead of coal, for cooking and heating."

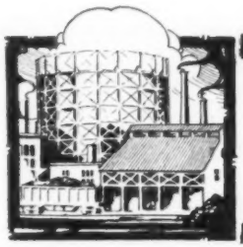
But Mr. Whitney's suggestion is significant of the trend the public's attitude is likely to take within the near future. He grows impatient at repeated urgings to save coal with utter disregard to individual interests when the quantity thereby saved is puny compared to what could be saved by more efficient means of utilizing the coal resources already at hand. The minds of many thousands of the country's citizens, with increasing knowledge, are gradually turning into the same channels. Then, with a great popular demand for effective action behind him, Dr. Garfield is apt to turn to the drastic means as the shortest cut to his goal of getting the country's heat with the least consumption of coal.

If that time comes the gas companies will not be asked if they can provide the gas to meet the demand. It will be taken for granted that they will, since that, in fact, is the primary reason for their existence.

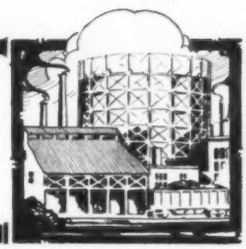
Saves $2,000 Daily by Completion of Gas Line

By the completion of a gas line connecting up with the Midway to Los Angeles line at Rose Station, the San Joaquin Light & Power Company has placed itself in a position to save $2,000 daily in fuel charges and a saving to the Government of many thousand barrels of oil a month.

The pipe line has recently been constructed at a cost of about $180,000, and connects up the Bakersfield steam plant with the Midway gas lines. Gas will be burned instead of oil.



NEWS OF THE GAS INDUSTRY



Pass October Dividend of Providence Company

The board of directors of the Providence (R. I.) Gas Company voted Sept. 9 to pass the October dividend with the company. This action was taken because the company's earnings "were not sufficient to warrant its payment."

To Appraise Iowa City Gas and Power Plant

The gas plant will be appraised by the city with the object of setting rates and perhaps with the purchase of the Iowa City (Iowa) Light & Power Company properties by the municipality.

The W. A. Baehr Engineering Company, of Chicago, will have charge of the appraising.

Stock Issue Cleans Up Debt of Contra Costa Company

The Contra Costa Gas Company, which operates in Pittsburg, Antioch, Concord, Martinez, Port Costa and Crockett, in Contra Costa County, Cal., has been given permission by the State railroad commission to clean up an indebtedness of about $45,000 by the issue of $50,000 worth of common stock, the stock to be sold to net not less than $85 a share.

This company has been operating in the growing towns mentioned and has been trying to keep up with the remarkable industrial growth of that section. In doing this an indebtedness of $75,000 was incurred up to December of last year. This was reduced to $45,000, and S. Waldo Coleman, president of the company, arranged a plan by which this could be wiped out, even during the war times. Mr. Coleman found enough people who would purchase stock in the company to take up 500 shares of stock at 85, which would leave the company without a bit of floating debt and with a growing industrial field in which to operate. This plan the State railroad commission has approved.

The demands upon the company from growing industrial plants in the cities in which the company operates have been a great strain upon the company, but these demands had to be met in the interest of war industries.

Pawtucket Company to Send Out Girl Meter Readers

More evidence of war-time conditions will be seen when girl meter readers employed by the Pawtucket (R. I.) Gas Company will substitute in the vacancies left by boys who have entered the service, and cover the regular schedule. There is a possibility of the employment of girls in this capacity being continued after the conclusion of the war should they deliver the required efficiency. Male meter readers, however, will not be discharged or transferred for the present.

Oil and Gas Company Formed in Maryland

Articles of incorporation were granted at Annapolis, Md., to the Monumental Oil & Gas Company of Allegany County, with $50,000 capital stock. The company has an option in Warren County, Pennsylvania, embracing 560 acres of oil and gas lands. The incorporators are H. O. Norris, Baltimore; Dr. Arthur H. Hawkins, Cumberland, and Dr. I. L. Ritter, Dr. J. C. Cobey and F. H. Schrieber, Frostburg. Mr. Schrieber, who has been made president and general manager of the new corporation, has resigned his position as general manager of the Georges Creek Parker Coal Company. Dr. Cobey is secretary and treasurer of the new company.

THE LONE STAR GAS COMPANY has declared the regular quarterly dividend of 2 per cent, payable Sept. 30 to stock of record Sept. 21.

National Exposition of Chemical Industries to Take Place Week of Sept. 23 at Grand Central Palace

More than 350 Exhibits, Representing Every Field of Industrial Chemistry and Chemical Manufacture, Will Be Displayed and Demonstrated

Unusual interest is being displayed in the Fourth National Exposition of Chemical Industries, which will be in session at New York during the week of Sept. 23. The exposition will be held in the Grand Central Palace, New York City, as originally planned, and it will be the last exhibition of any kind to be held there until after the war, due to the fact that the big building has been taken over by the Government for war purposes.

It is estimated that 25,000 chemists from all parts of the United States, Canada, South America and from a number of our Allied countries in Europe, will be in New York to attend the exposition and the conventions to be held in conjunction with it. It is to be the largest and most important exhibition of its kind ever held, and many new products will be shown for the first time.

More than 350 exhibits representing every field of industrial chemistry and chemical manufacture will be displayed and demonstrated. Prominent men in chemical and industrial plants, in colleges and industrial schools, in Government and civilian work have been marshalled for this exposition, which will take on the appearance of a great college and workroom for the interchange of ideas.

In view of the present international situation regarding chemical industries in general, and their rapid growth in the United States during the period of the European war in particular, the exposition has a message to deliver emphasizing the opportunity which is now being presented to the American manufac-

turer. Necessity has spurred on many chemists, and just how far they have succeeded may be judged by the exhibits at the exposition. The American chemist has come to the front and has shattered in four years the "line" of the German chemist which had been building for more than forty years. In other words, the camouflaged "veil of mystery" of the German chemists has been lifted by the American chemists, whose discoveries or "secrets," as the Germans called them, are not locked in the brain of one man, but given to others for the betterment of the industry. At the exposition this getting together of science and industry, with timely addresses and motion pictures, this exchange of ideas, will benefit all those who attend and its influence in bettering and increasing the national production will be strongly felt.

While the exposition will bring manufacturers of machinery, equipment, products and supplies together with men who are using them, its chief effect will be to show the people of the country that the chemists of America have made rapid advances the past year, greater than ever before in this country's history. The convention will bring to light some of the marvelous results of recent research, and many engineers and experts who hold important positions in the advance of the chemical industry will be speakers.

The advisory committee of the exposition is composed of Charles H. Herty, chairman; Raymond F. Bacon, L. H. Baekeland, Ellwood Henrick, Henry B. Faber, Bernard C. Hesse, A. D. Little, W. H. Nichols, R. P. Perry, H. C. Parmelee, G. W. Thompson, F. J. Tone, T. B. Wagner and M. C. Whitaker. Charles F. Roth and F. W. Payne are the managers. Dr. Bacon, of this committee, is now head of the Chemical Warfare Section of the National Army and a member of General Pershing's staff.

Some sections of the South again are sending exhibits, and Canada is taking the opportunity of presenting the materials it has available for development by the chemist and financier. Technical and business men over the country should give heed to these exhibits since they will show how they can meet the war-time need. A section for the glass and ceramic industry has been added, with which the American Ceramic Society is cooperating.

Papers covering practically every phase of chemistry and a discussion of steps that will need to be taken after the war will be presented by leading experts in each branch. Pressing chemical problems concerning many of the chief articles of domestic and foreign commerce will be taken up during the convention, and it is expected these discussions will have an important bearing on the future manufacture of materials that have been scarce and high-priced ever since the curtailment of American commerce with Germany and other European countries.

An elaborate and important program has been arranged for the week as follows:

Monday, Opening Day—Opening addresses to be made during the afternoon by C. H. Herty, chairman of the advisory committee; William H. Nichols, president American Chemical Society; F. J. Tone, president American Electrochemical Society; G. W. Thompson, president American Institute of Chemical Engineers. There will be symposiums on "The Development of Chemical Industries in the United States, Notably Since July, 1914." Evening—Motion pictures. Water Power, Its Development and Use: "The Falls of Iguizu, Argentine"; "Great Latent Powers"; "Power of Wealth—Hydraulic Development"; "Power Transmission; Canadian Shawinigan Falls Power Development and Its Surrounding Chemical Industries" (Shawinigan Water & Power Company); "Fixation of Atmospheric Nitrogen at Niagara Falls and Feeding the Soil with It" (American Cyanamid Company).

Tuesday, Sept. 24, Afternoon—Symposium: Acids and Chemical Engineering. E. J. Pranke, "Development of Nitric Acid Manufacture"; Emerson P. Poste, "Developments in the Manufacture of Glass Enamelled Apparatus." Evening—Motion pictures. The Oil Industries: "The Story of a Cake of Soap"; "Light from the Rocks—Natural Gas"; "Lake Asphalt Industry"; "Asphalt Roofing Industry"; "Asphalt Colloids" (Barber Asphalt Company). Speakers (9 p. m.), J. A. Switzer, "Water Power Potentialities of East Tenressee"; Herbert C. Henegar, "Mineral Resources of East Tennessee" (representing Knoxville Chamber of Commerce.

Wednesday, Sept. 25, Afternoon—Symposium: Potash. C. A. Higgins, "Recovery of Potash from Kelp"; Linn Bradley, "Recovery of Potash from Iron Blast Furnaces and Cement Kilns by Electrical Precipitation"; John W. Hornsey, "Potash from Desert Lakes and Alunite"; Alfred de Rapp, Jr., "Potash from Searles Lake." Evening—Motion pictures. "Electrical Precipitation of Potash from Cement Dust" (Research Corporation); "Colloid Chemistry"; "The Operation of a By-products Coke Plant"; "Moving a Forest to France"; "The Story of Potash," illustrating the manufacture of potash from the Brine of Searles Lake, California; "From Coal Mine to Corn Field, the Production of Sulphate of Ammonia and Its Use in Agriculture" (the Barrett Company).

Thursday, Sept. 26, Afternoon—Ceramics—American Ceramic Society meeting. L. E. Barringer, "Manufacture of Electrical Porcelain" (illustrated motion pictures); A. W. Bleinginger, "Recent Developments in the Ceramic Industries"; H. Ries, "American Clays"; F. A. Whitaker, "Manufacture of Stoneware" (illustrated slides); J. B. Shaw, "Fuel Conservation"; S. C. Linberger, "Carborundum Refractories." These will be followed by motion pictures as designated for the evening program. Evening—Motion pictures. The Ceramic Industries: "Glass Making" (Corning Glass Company); "The Making of Cut Glass"; "Manufacture of Electrical Porcelain" (General Electric Company); "The Making of Pottery." 9 p. m.—Speakers, J. A. Switzer, "Water Power Potentialities of East Tennessee"; Herbert C. Henegar, "Mineral Resources of East Tennessee" (representing Knoxville Chamber of Commerce).

Friday, Sept. 27, Afternoon—Symposium: Metal Industries. Leonard Waldo, "Development of Magnesium Industry"; Alcan Hirsch, "Ferro-Cerium Pyrophoric Alloys"; Theodore Swann, "Ferro-Manganese"; Joseph W. Richards, "Ferro Alloys of Silicon, Tungsten, Uranium, Vanadium, Molybdenum and Titanium." Evening—Motion pictures. Carelessness: The Destruction of Life, Wealth and Resources. "Careless America" (Firestone-Universal); "The Crime of Carelessness"; "The Workman's Lesson"; "Keep Your Business Going" (General Fire Extinguisher Company); "Vaccines for Prevention of Disease."

Saturday, Sept. 28, Afternoon—Symposium: Industrial Organic

Chemistry and Its Progress"; C. A. Higgins, "Kelp as a Source of Organic Solvents"; George H. Tomlinson, "Wood Waste as a Source of Ethyl Alcohol." Evening—Motion pictures. "Manufacture of Zinc Oxide" (New Jersey Zinc Company); "Manufacture of Genuine Wrought Iron Pipe" (A. M. Byers Company); "From Log to Lumber" (Southern Pine Association); "The Wonderland of the Appalachians" (Clinchfield Railway). 9 p. m.—Speakers, J. A. Switzer, "Water Power Potentialities of East Tennessee"; Herbert C. Henegar, "Mineral Resources of East Tennessee" (representing Knoxville Chamber of Commerce).

Fire Breaks Out at Saranac Plant—Damage Small

The plant of the Saranac Lake (N. Y.) Gas Company narrowly escaped destruction by fire Wednesday night, Sept. 4, shortly after 10 o'clock.

When the firemen arrived the boiler house, a few yards from the gas tank, was in flames. After much difficulty the hose was connected and a stream of water was soon playing on the flames. The fire was extinguished within a few minutes after the firemen arrived.

Earnings All Byllesby Utilities

Combined earnings of all Byllesby utility properties for the months of July, 1918 and 1917, and for the years ended July 31, 1918 and 1917, are reported as follows:

Month of July—	1918	1917
Gross earnings...	$1,725,121	$1,392,922
Net earnings.....	652,213	626,900
Year ended July 31—		
Gross earnings...	21,368,873	18,286,595
Net earnings.....	8,611,068	8,606,272

Expect to Close Contract for Additional Supply of Gas for Louisville

Bearing out the report of Erasmus Haworth that the gas field from which Louisville draws its supply is as yet undeveloped, Joseph Harkins, of the law firm of Harkins & Harkins, Prestonsburg, Ky., is expected to arrive in Louisville shortly to close a contract with the Louisville Gas & Electric Company for the development of the field and the piping of from 10,000,000 to 20,000,000 additional cubic feet daily to Louisville. Harkins & Harkins represent the majority of the holders of options and land owners in the gas fields adjacent to that from which gas is piped to Louisville and Lexington, and it is said the cost would be small to run connecting pipe lines from the new wells to the main line. The work will probably not take longer than ninety days, and it is understood the Government will give priority to orders for piping to supply gas to those cities which suffered most severely from a gas shortage last winter.

The gas company has been negotiating with a concern in eastern Kentucky for several months to bring more gas to Louisville, and it is believed the negotiations have reached such a head that a contract will be closed within the next ten days, work of drilling and laying pipe lines to begin immediately.

Empire Rigs Destroyed by Storm Now Rebuilt

The Empire Gas & Electric Company, of Bartlesville, Okla., had 153 rigs smashed into kindling when the El Dorado oil field was swept by the most disastrous storm in its history. The compressor station on the Enyart lease in the course of construction was destroyed, and many other buildings.

All the rigs have been rebuilt and the only evidence still left of the storm is the fact that most of the rigs are of bright new lumber.

Pontiac Commission Refuses to Authorize Increase

The Pontiac, Mich., commission Sept. 6 formally refused to authorize a raise in gas rates from $1 to $1.15 per 1,000 ft. on the ground the requested action exceeds the powers given that body by the charter.

It was suggested that the matter be put before the public in a referendum.

Fuel Administrator of Pacific Coast Inspects Natural Gas Field to Determine Amount of Gas That May Be Diverted for War Use

A thorough investigation into the natural gas situation in Los Angeles and southern California with a view to determining the amount of gas that may be diverted for use by war industries at Los Angeles harbor was begun in Los Angeles Sept. 5 by D. M. Folsom, Federal Fuel Administrator for the Pacific Coast.

The investigation is being conducted jointly under the direction of the State railroad commission and the Federal Fuel Administration.

"I find that there will not be enough natural gas to supply our war industries and at the same time place Los Angeles consumers on a natural gas basis this winter," Mr. Folsom said. "But my investigations have convinced me that by the use of both natural gas and mixed gas there is no danger of a gas shortage in southern California during the next eight or nine months.

"The Standard Oil Company has facilities available for furnishing 51,000,000 ft. of natural gas daily, and when new equipment now being installed is completed, the company will increase its present output by about 60 per cent.

"Two new gas lines, one a 4-in. pipe and the other an 8-in. pipe, are being laid from the gas fields to the shipyards at the Long Beach and Los Angeles harbors to supply gas for use by the shipbuilding companies and for domestic use by the shipworkers.

"Los Angeles consumers are receiving the best gas of any city in the United States. The gas supplied Los Angeles has 800 heat units, while the gas of other cities averages about 528 heat units. Natural gas has 1,100 heat units, based on the B.t.u. system. Thus it can be seen how necessary it is that this gas should be diverted to industrial establishments engaged in war work."

Mr. Folsom said there is no shortage of fuel oil in California at the present time, neither is there a shortage of gasoline.

"But we do not know how long these conditions will continue," he added. "There may come a tremendous demand that will require every available barrel of oil we can produce on the Pacific Coast.

Uncle Sam to Train Employment Managers

The Government has found it necessary to enter the field of education on a large scale. War emergency courses in employment management, conducted by the Employment Management Division of the War Industries Board, under the auspices of five governmental departments, have been arranged for in nine universities to date. The outline of the courses of study was made by Captain Boyd Fisher, who has general supervision of the work.

These courses in employment management are designed to train men or women who already have a basic experience of at least three years in industrial life and factory methods, and who have come in actual contact with shop problems. Employers of labor, particularly those having war contracts, are urged to suggest men or women from their own organizations as candidates for these courses. With the increasing tightening of the labor situation, it is absolutely essential that large plants have an efficient central employment department. If the Government is to take upon itself the task of furnishing labor when called upon it is necessary that that labor be employed in the proper manner. In other words, each man should be hired to do the thing he is best fitted to do. In these days every man must count, and there must be no square pegs in round holes. It has been thoroughly proved that an experienced employment manager, in charge of all hiring and firing, comes very near to solving the labor problem. Therefore it is up to the employer to place his house in order and make the best use of the men with which he is supplied.

The introduction of the employment manager into industry and the standardization of the services of an employment department is acknowledged to be one of the greatest movements now taking place in the manufacturing industry of this country.

Courses have been arranged for at Harvard, in co-operation with the Massachusetts Institute of Technology, Boston University, in Boston; Columbia University, New York; University of Rochester, Rochester, N. Y.; Carnegie Institute of Technology, and the University of Pittsburgh, Pittsburgh, Pa.; University of Washington, Seattle, and the University of California at Berkeley.

There already have been 172 graduates from the classes conducted thus far. Most of these have returned to their own plants and placed in operation a department of employment. In each case where a central employment department is in vogue there is never a thought of returning to the old-fashioned hit-or-miss method of hiring men.

The courses of instruction in the various schools run from six weeks to two months, and the classes are conducted by the foremost authorities in the country on the various subjects covered.

The course of study deals chiefly with the problems of employment management. Brief consideration is given, however, to statistics, labor economics, and business organization and management. The material presented on the subject of employment management covers the organization and equipment of an employment department, the employing of the workers, the training of the workers, the payment of the workers, the control of working conditions, effects to keep the work up to standard, and the government of the shop. There are no charges for the course, except the outlay for living expenses of students and about $15 for books and supplies. It has been arranged to begin new classes as soon as each previous class is graduated, so application for admission to the courses in any of the above-named schools may be made at any time.

Employers of labor having candidates for admission to the classes and individual applicants will be furnished with necessary information concerning qualifications for admission and other data regarding the courses by addressing Captain Boyd Fisher, 717 Thirteenth Street, N. W., Washington, D. C.

New Schedule of Rates Filed by Hagerstown Company

The Hagerstown Light & Heat Company, which supplies gas to Hagerstown, has filed with the Maryland Public Service Commission a new schedule of rates for gas in Hagerstown, increasing slightly the old rates. Last April the company asked for and was granted increased rates, but that increase was asked to cover the increased costs of oils and other materials which go into the manufacture of gas, in the hope and expectation that they had reached the maximum price.

Since then, however, there have been other increases in oils and labor, and the company found its receipts running behind the expenditures and was forced to make another increase.

The following statement relative to the increase and showing the new rates was given by the company:

"On Saturday, Aug. 31, the Hagerstown Light & Heat Company filed with the Public Service Commission of Maryland a new schedule of rates covering gas service in Hagerstown and vicinity, to become effective Oct. 1, 1918. The great advance in the cost of oil and other material over the contract price, which was the basis of the schedule filed April 1, makes it necessary to advance the rates slightly in order to provide operating revenue.

"The present cost of oil in open market is 33 1-3 per cent higher than on April 1; added to this is an increase of 10 per cent of freight rate on all coal used. Labor has advanced 30 per cent to 40 per cent and material for repairs has advanced 60 per cent since the existing rate became effective.

"As was stated at the time of introduction of the present rate, the company is not asking its patrons to bear this entire increase, but the company will continue to bear its share of the burden.

"The new schedule of rates filed is as follows:

"Gas rate schedule "B" rates for general service, effective on Oct. 1, 1918, after September, 1918, meter readings:

"For the first 5,000 cu. ft. per month, $1.50 gross or $1.40 net per 1,000 cu. ft.

"For the next 20,000 cu. ft., $1.45 gross or $1.35 net per 1,000 cu. ft.

"For the next 25,000 cu. ft., $1.35 gross or $1.25 net per 1,000 cu. ft.

"For the next 50,000 cu. ft., $1.25 gross or $1.15 net per 1,000 cu. ft.

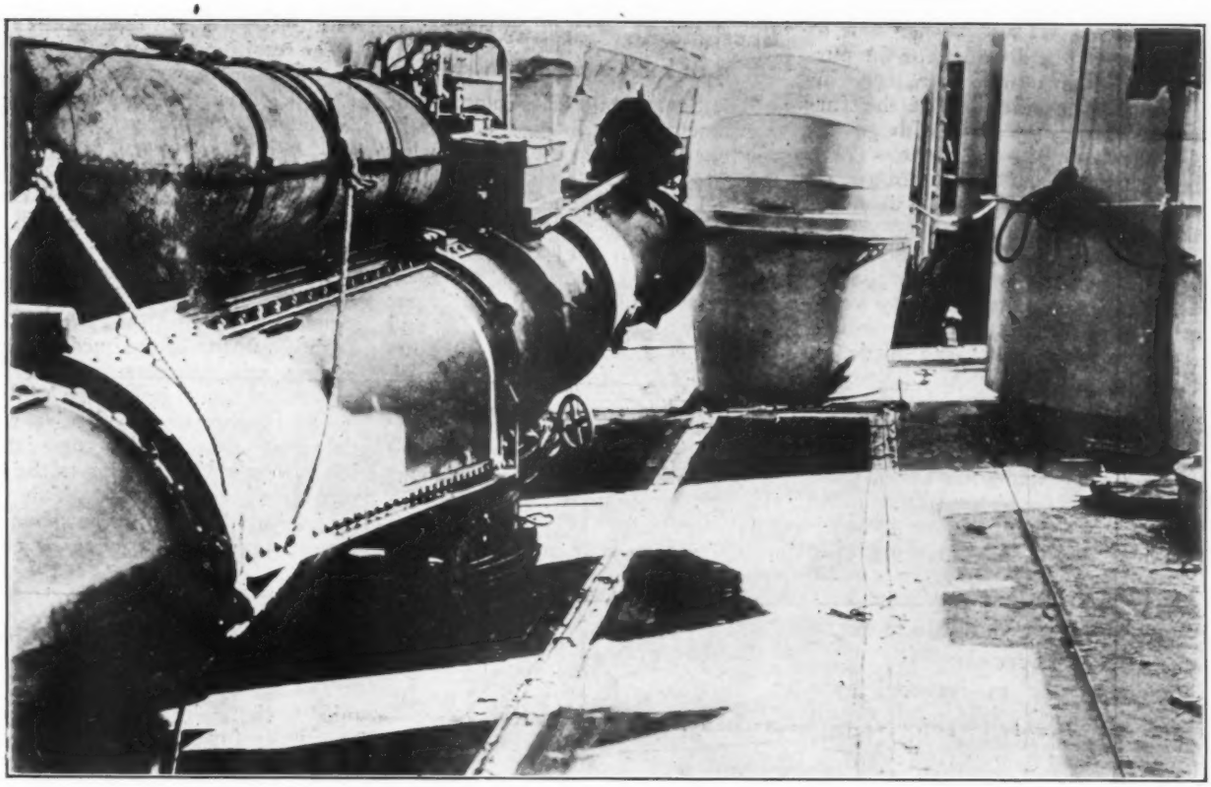
"For the next 100,000 cu. ft., $1.10 gross or $1.00 net per 1,000 cu. ft.

"For excess over 200,000 cu. ft., $1.00 gross or 90 cents net per 1,000 cu. ft."

Bellingham Rate Increase Effective Oct. 4

Notice of a proposed increase in gas rates charged in Bellingham, to become effective Oct. 4, has been filed with the public service commission by the Puget Sound Traction, Light & Power Company. The company proposes to raise the present minimum of 50 cents to 75 cents, eliminate the discount on bills and increase the rate from $1.55 to $1.65.

Consumers have been officially notified through Bellingham civic organizations of the thirty-day period for protest intervening before the new rates are to become effective.



TORPEDO TUBE ON U. S. DESTROYER—A THOUSAND-DOLLAR LIBERTY LOAN SUBSCRIPTION WILL BUY A TORPEDO TO BE IMPELLED FROM IT

Oklahoma City Opens Canteen for Soldiers

A canteen hut has been built at the Santa Fe station for the use of the Canteen Unit of the Red Cross, serving lunches and drinks to the soldiers who pass through the city. Every troop train is met and the soldiers' wants supplied. The Oklahoma Gas & Electric Company furnishes the gas and electric service gratis.

To Prevent Collection of Increased Rate by Chicago Company

Court action to prevent collection by the Peoples Gas Light & Coke Company of the first bills under the advanced rate authorized by the public utilities commission, which are due to be sent in a few days, is the latest plan of Donald B. Richberg, attorney for the city council in the gas litigation. He declared that he would carry the matter into court immediately.

"We take the position that the injunction issued by Judge Gibbons against enforcing any higher rate than 80 cents is still in effect," said Mr. Richberg, "and our action to prevent disobedience to that injunction may take the form of contempt proceedings."

The decision referred to was rendered several years ago.

Coke to Be Distributed Under Direction of Coke Bureau in Washington

Officials of the Indiana Federal Fuel Administration have just been advised by the coke bureau in Washington that all classes of coke will be distributed under the direction of that bureau. The requirements of the war industries and water gas manufacturing plants will be met first, the message said, and the distribution of gas coke, after these industrial requirements have been taken care of, will be under the control of the State and county fuel administrators. Any coke available for domestic use will be distributed pro rata to those dealers who handled the product before the beginning of the war. Shippers of coke are required to make weekly reports to the State Fuel Administrator of all coke they have shipped into the State.

Average of 25,000,000 Steel Balls Daily With Gas as Fuel

Between 25,000,000 and 30,000,000 steel balls for ball-bearings are being manufactured every day with gas as a fuel. This is the statement of E. J. Caspers, of the Public Service Company of Northern Illinois. He declares that the consumption of steel for this purpose alone runs in excess of 500 tons a month.

Gas equipment has made it possible to divert from 15 to 20 per cent of the heat of gas to the forming of the balls as against about 5 per cent under the old coke arrangement, according to Mr. Caspers.

"In the ordinary method of carrying the manufacture through," says Mr. Caspers, "a Bradley drop hammer is used in forming the string of balls. The heat treatment is performed in muffle furnace with coke or oil as fuel. Manifestly, the efficiency of the furnace is low, because the muffle absorbs the most of the heat. This is why it has been estimated that not more than 5 per cent of the heat is available when the before mentioned fuels are used.

"With gas, however, it is found

that between 15 and 20 per cent of the heat can be diverted for the purpose, and thus there is a large increase in the efficiency of the furnace, which may also, with gas as fuel, be made of a small size. There is likewise an automatic control of the heat—something impossible under the old method."

Ball-bearings in machine designing were originated in the early part of the bicycle era, almost thirty years ago. Mr. Caspers declared considerable improvement was made in their manufacture when the consolidation of bicycle manufacturers was effected in 1904, but the requirements then established were by no means so severe as the standards which must now be met in high-grade annular bearings. The automobile industry has been responsible for the raising of standards.

Hearing Held on Helena Rate Increase

Claiming that its revenues were never sufficient to give a fair return on the capital invested, the Helena (Mont.) Light & Railway Company, in the hearing on its petition for the privilege of raising gas rates from $2 to $2.50 per 1,000 cu. ft., submitted its case to the public service commission, after a three-hour session.

J. H. Pardee, vice-president of the company, stated that in 1905, when the plant was taken over, 23,000,000 cu. ft. of gas was sold. This increased to 27,000,000 last year, but the consumption is falling off. It has 1,492 customers at present.

E. C. Day, city attorney of Helena, brought out the fact that the plant has increased in physical valuation from $106,000 in 1905 to $210,000. Mr. Pardee did not know from what source the money was obtained to pay for the improvements.

The figures showed the revenues of the company from the gas department the first half of 1917 were $25,800 and expenses $16,836, leaving a net profit of $8,244 without deducting for taxes and depreciations. The first half of this year the revenues were $23,174 and expenses $18,069. It was contended that after deducting for taxes and 5 per cent on the value of the plant that the operations of the plant showed a deficit.

THE GEORGIA-KENTUCKY OIL & GAS COMPANY, Winchester, Ky., capital, $30,000. Incorporators, J. R. Lawrence, J. B. Holley, S. M. Meadows and T. B. Dumas.

Sacramento Company Wants Lodi Rates Advanced

The Sacramento Gas Company, of Sacramento, Cal., has asked the railroad commission to fix the following gas rates for gas service to consumers in Lodi, San Joaquin County:

One dollar for the first 500 cu. ft. or less a month; $1.90 per 1,000 for the next 7,000 cu. ft.; $1.80 per 1,000 for the next 10,000 cu. ft.; $1.70 per 1,000 for all over 20,000 cu. ft.; and in additon a surcharge of 10 cents per 1,000 cu. ft. for all gas consumed.

The Sacramento company built and maintains a separate plant for the manufacture of gas from fuel oil in Lodi, with the necessary distribution system for it. In 1917 the company purchased fuel oil for gas manufacture at 80 cents a barrel, but the contract expired last December, and since that time the price has been gradually mounting, until it now will have to pay $1.95 a barrel. This increased cost of oil necessitates an increased schedule of rates, says the company.

Increase Granted Bangor Company

The public utilities commission announced its decision Sept. 11 on the proposed increase in gas rates of the Bangor (Me.) Gas Light Company, approving the same as emergency rates under war conditions. They make a net rate of $1 per 1,000 cu. ft. for the first 5,000 ft. per month, with reductions for several classes of larger consumption.

The commission held a public hearing at Bangor, Sept. 4, at which no opposition to the increase was made. The decision states that the company earned above operating expenses in 1914, $24,143.90; in 1915, $25,860.99; in 1916, $24,020.89; in 1917, $18,786.65, and in the first seven months of 1918 showed a net loss of $1,024.40.

The net loss per 1,000 cu. ft. in 1918 has been 2.95 cents per 1,000. It now costs $1.7866 per 1,000 to operate the plant, against $1.01246 in 1914, and $1.3544 in 1917.

"An increase of 25 cents per 1,000 cu. ft., taking the experience of the first seven months of 1918 as a basis, would yield 22.05 cents per 1,000 for interest and return on investment. If the output is 65,000,000 cu. ft. per annum, approximately the same as in 1917—and the figures for the first seven months of the present year indicate that it is not likely to be more—the total income after the payment of operating expenses will be $14,632.50," says the commission.

The company has outstanding $300,000 of 5 per cent bonds issued Nov. 1, 1901. The annual interest on the bonds is $15,000, and the company asks for rates which will fall short of paying that.

The order of approval provides "that this order shall not be construed as relieving said Bangor Gas Light Company of the burden of justifying said increases, or any increases contained in its schedule now in effect and made since its first schedule was filed with this commission, in any proceeding relating to the reasonableness of its rates which may be instituted at any time after the present war is declared to be at an end."

Wausau, Wis., Company Seeks Increased Rate

The Wausau Gas Company has applied to the Railroad Commission of Wisconsin for permission to increase the rates charged the consumers for gas, claiming the existing rates are inadequate to cover necessary operating expenses and net a reasonable return upon its investment.

Proclamation of the President of the United States in Regard to Labor Adjustments

(*Continued from page 275*)

proved views of progress in normal times, which, under war conditions, might seriously impair the present economic structure of our country;

That the declaration of our principles as to the living wage and an established minimum should be construed in the light of these considerations;

That for the present the board or its sections should consider and decide each case involving these principles on its particular facts and reserve any definite rule of decision until its judgments have been sufficiently numerous and their operation sufficiently clear to make generalization safe.

THE RHODE LSLAND OIL & GAS COMPANY, Providence, R. I., recently fiied articles of incorporation. The capitalization is $15,000. Incorporators, Henry Hosier, John P. Johnson and Samuel J. Pierce.

Gas to Play an Important Part in Chicago Dairy

Gas is to play an important part in the matter of keeping one portion at least of Chicago's milk supply sweet and pure. The Englewood Dairy Company, at 1140 West Sixty-third Street, has recently installed a 6-hp. high-pressure gas-fired boiler, and, officials of the company declare, it is already proving a wonderful convenience and advantage in their business.

The company requires a ready supply of steam for pasteurizing milk and sterilizing bottles and milk cans. They learned, as the result of a test, that there is no quicker, cleaner or more efficient method of obtaining steam than by means of a gas-fired steam boiler.

It was through this test that the Englewood company decided to install the gas-fired boiler. They decided that it was the province of a modern dairy to remain scrupulously clean, and that the presence of coal and ashes on the premises or in the vicinity could be very well dispensed with. Another thing which actuated them was that the demand for steam is likely to be intermittent—that is, it is wanted at once, and wanted badly, when it is wanted. Under their old coal-fire system it was necessary to keep up steam all the time. With their new gas-fired boiler, steam can be produced in a few minutes in a perfectly clean way without smoke, dirt or ashes.

Gas Man's Son Chosen to Make Address at Dedication of Woodrow Wilson Bridge in Lyons

Henri Brodin, a fourth form scholar at Ampere's High School, Lyons, and son of I. Brodin, director de la Cie du Gaz de Vaise, was chosen to read a sonnet by Prof. Harry Webb Farrington, of Harvard University, a soldier of the American forces, and to make an address to his excellency, Dr. Sharp, Ambassador from the United States, on July 14, 1918, at the dedication of the Woodrow Wilson Bridge.

The address and sonnet are given below:

"SIR: From the first days of Christianity children were allowed extraordinary liberties. I was told that I might be given leave to approach and address a great American Ambassador, first to tell him how thankful we are for his visit to Lyons, and then to recite a sonnet—which is as good as a long poem—composed by Professor Farrington, an American soldier, who has favored us with his welcomed inspections at our old Ampere's school.

"May I be allowed to say why our learned Mayor of Lyons begged to devote this bridge formally and solemnly to your illustrious President?

"I have read in my primers that our old city was the foster-mother of many famous humanists. Nowhere

HENRI BRODIN

out of Paris were there to be found so many distinguished men of letters as at Lyons. Now, our Mayor is a great scholar; he knows our humanists were, in their way, great bridge builders. Not far from Lyons, at Avignon, we have al ldanced over the bridge that was erected in the twelfth century by the Brotherhood of "Saint Benezet." Benezet is a diminutive Christian name of Benedict, the founder of the bridge builders' brotherhood; they aimed at building bridges for the benefit of the provinces that were separated from one another by large rivers. We, the people of Lyons, boast not only of having issued the first books printed in France and in the French language—which are actual bridges—but of having erected over our rivers fine bridges made of stone and mortar. Your benevolent President Wilson is a powerful bridge builder, wishing to promote the prosperity and happiness of the nations.

"'The deep and dark blue ocean' may roll its waters; President Wilson has bridged it over; and it will be crossed by our French youngsters, desirous to know better the climes where lived William Penn, Washington, Jefferson, Lincoln and Wilson, the great bridge builder of our age. HENRI BRODIN."

"These silent bonds of native stone,
Which span the currents of the Rhone,
And with the others bind in one
The many parts of fair Lyon,
In thought and action represent
A nation, through her president,
Which gave her wealth and soldiers, free,
To span the currents of a sea,
And with her allied sister bind
In one the hearts of free mankind."

Everett Company to Supply Fuel Needs of New Steel Plant

The new plant of the United States Steel Company, Everett, Wash., is 80 per cent completed, and will be ready for occupancy about Oct. 30. The entire fuel requirements of this concern will be furnished by the Puget Sound Gas Company. It is estimated that the consumption will be approximately a quarter of a million cubic feet per month.

Revaluation of Minneapolis Plant May Be Basis of New Rate Scale

The Minneapolis public lighting committee was in conference with Milo R. Maltbie, municipal valuation expert retained to advise it on details preliminary to taking up the renewal of the gas contract in advance of the regular council meeting.

Mr. Maltbie said he would consult the Marx valuation, fixing the value of the company's property at $4,300,000, in recommending procedure to the council. He also indicated he would recommend a revaluation of the property being made by the company be checked to determine its ac-

curacy in entering into rate-making negotiations.

Seventy-seven cents per 1,000 cu. ft. for gas does not allow the Minneapolis Gas Light Company a fair return on the minimum value of its property.

This was the statement made by Mr. Maltbie to the council public lighting committee recently.

"It is exceedingly difficult," he said, "to forecast what is to be a reasonable rate for gas for the five-year period for which Minneapolis is about to make a new contract. It costs much more now than five or two years ago to manufacture gas. The two most important factors in fixing the price of gas are the cost of coal and oil. Both have recently sharply advanced in price.

"Under your contractual ordinance with the company the price fixed must stand for five years. The company may appeal from it, but the city does not have that option. The war has greatly advanced the price of all materials entering into the manufacture of gas. It is impossible to tell whether the war will last six months or five years, or at this time to ascertain whether prices of materials will be advanced or reduced."

Mr. Maltbie said in arriving at a reasonable rate for gas it would be necessary to agree upon a valuation of the company's property as a basis. He said an independent valuation by the city could not be completed inside of nine months. Meantime the present contract expires Nov. 1.

W. F. Baehr, engineer for the company, said the valuation submitted would be substantially that of five years ago with deductions for superseded property and additions for renewed and extended equipment. Mr. Maltbie estimated it would require at least six weeks to check such a valuation.

Increased Schedule of Rates Filed by Trinidad Company

A new schedule of gas rates has been filed by the Trinidad (Col.) Electric Transmission, Railway & Gas Company with the public utilities commission effective Sept. 16, 1918.

At the present time the rates for gas service are as follows:

For illumination, per 1,000 cu. ft., $1.70; for fuel, per 1,000 cu. ft., $1.10; for lighting and fuel purposes, per 1,000 cu. ft., $1.40.

The above rates subject to a discount of 10 cents per 1,000 cu. ft. if bill is paid within seven days from date of bill.

The new schedule provides for a single rate, the rate per 1,000 cu. ft. being $1.35. The minimum charge provided in the new schedule is $1 per month.

As reason for the filing of the new rates, the company claims that it is necessary that revenues be increased in order to provide for increases in wages, fuel and other expenses.

Two Important Rulings of Indiana Commission

Two rulings by the Indiana Public Service Commission are of the most vital importance to Indiana gas companies just now, as both orders are radical departures from former methods of procedure of the commission. The first ruling provides that subscriptions, donations and gratuities of utility companies hereafter shall not be charged to operating expense account, and the commission's report forms are authorized to be changed so that such cannot happen. This order follows:

The commission having under consideration the matter of a correction of its uniform classification of accounts of various public utilities, as provided by law, and being duly advised in the premises;

It is hereby ordered by the Public Service Commission of Indiana, that the words "subscriptions, donations and gratuities" be and the same are hereby eliminated from the explanatory paragraph under "miscellaneous general expenses." If, however, any expenditures of this character are made by any utility in the State of Indiana which comes within the regulatory jurisdiction of this commission, those expenditures shall be charged to an account "subscriptions, donations and gratuities," and shall be shown under "other payments from net income."

The object and intent of this order being to eliminate items of this character from the operating expenses of the utilities.

The other order, given below, provides that, beginning with the present month, all petitions, supplemental petitions and papers filed with the commission shall be delivered by the company filing such papers to numerous interested persons:

The commission having given due consideration to the matters hereinafter set out, hereby issues the following order:

It is ordered by the Public Service Commission of Indiana, that on and after Sept. 1, 1918, true copies of all petitions, supplemental petitions, pleadings and papers filed with the commission shall within three days after such filing be delivered by the party filing the same to the clerk of each municipality or town affected or involved, and to each newspaper therein; to the secretaries of commercial organizations therein, and to each and every party affected or to the legal representative thereof.

That within ten days from the date of such filing with the commission, the party filing such petitions, pleadings and papers shall file with the commission written proof of the delivery of such copies.

Court Rules Old Rate of $1 in Albany Is Unconstitutional

Supreme Court Justice Hasbrouck has declared the dollar gas law, prevalent in Albany, N. Y., for the last ten years, unconstitutional. Several sections of New York City are vitally affected by the decision, which was handed down Sept. 9.

On and after Sept. 27, when the Municipal Gas Company's new tariff of $1.30 per 1,000 cu. ft. becomes effective, the up-State public service commission, the Attorney General and the District Attorney of Albany County will be enjoined by the decision from enforcing the dollar rate for gas. The case will be appealed at Saratoga.

Greensboro Company Announces Increase—Effective Oct. 1

The Greensboro Gas Company, operating in Washington, Fayette and Westmoreland Counties, Pa., has announced that beginning Oct. 1 there will be an increase in their rates to industrial consumers from 30 cents to 35 cents per 1,000 ft.

Increase Requested by Cumberland County Company

The Cumberland County Gas Company has asked the New Jersey Public Utility Commission for an increase in the gas rate.

The company operates from Millville. Its service is through Commercial, Lawrence, Downe and Fairfield Townships, where lines were

extended some years ago. The franchise maximum rate for these places is $1.50 per 1,000.

The company indicates in its petition that it is impossible to operate its plant and provide service at present rates owing to the vast increase in everything which goes into gas making.

Personal Notes

ALONZO R. WEED, of Newton, Mass., has been reappointed chairman of the Massachusetts Gas and Electric Commission.

H. P. PITTS, manager of the commercial department of the Pacific Gas & Electric Company, San Francisco district, severed his connection with the company on July 31 to accept a position in the purchasing department of the Bethlehem Shipbuilding Corporation. On the eve of his departure the employees of Mr. Pitts' office assembled in Room 503, and Mr. Bostwick, the district manager, made a short speech, expressing regret that Mr. Pitts was leaving the company, but assuring him that the good will and good wishes of all for his success would go with him. Mr. Bostwick then presented Mr. Pitts with a gold watch tendered as a farewell token by the employees of the commercial department. The department has been reorganized and now bears the name of the "new business department," Frank Talcott being appointed superintendent of the gas sales bureau and H. M. Crawford engineer industrial gas and house heating bureau.

J. F. OWENS, vice-president and general manager of the Oklahoma Gas & Electric Company, has been appointed a member of a committee to raise $90,000 for the new Y. M. C. A. building in Oklahoma City.

THOS. J. LITLE, JR., formerly chief engineer of the Welsbach Company and now engineer of the Lincoln Motor Company, of Detroit, Mich., now in heavy production of Liberty aircraft motors, has been appointed a member of the Welding Research Committee of the Emergency Fleet Corporation, United States Shipping Board. Mr. Litle has been closely investigating both gas and electric welding conditions in all of the American plants producing Liberty motors, and his appointment will be helpful in affecting an interchange of data between the aircraft and shipbuilding industries. This appointment does not affect Mr. Litle's connection with the Lincoln Motor Company.

CHARLES B. YONTS, formerly with the Illinois Traction System from 1906 to 1912, and later with the Illinois Northern Utilities Company from 1912 to 1918, has been made manager of the La Crosse, Wis., properties of the Wisconsin-Minnesota Light & Power Company.

EDWARD H. WINSLOW, son of the late Sidney W. Winslow, died suddenly Sept. 13, at his home, 525 Cabot Street, North Beverly, Mass., after a few days' illness from pneumonia. He was thirty years of age. Mr. Winslow was born in Beverly, educated in the schools of that city and under private teachers in Boston, and entering Harvard was graduated in the class of 1910. Following his graduation he entered the banking business, and at the time of his death he was vice-president of the First National Corporation, which is controlled by the First National Bank of Boston. He was a director in the Beverly Gas & Electric Company.

Societies and Associations

THE ILLUMINATING ENGINEERING SOCIETY will hold its twelfth annual convention in the Engineering Societies Building, 29 West Thirty-ninth Street, New York City, on Oct. 10, 1918. This will be a one-day convention devoted entirely to lighting problems in connection with war-time activities. In view of the short period of the convention, only strictly business matters will be discussed, and there will be no entertainment of any kind provided for delegates. In addition to the papers, committee reports will be presented, and it is hoped that the discussions will be prepared, as time does not permit of any debate on general topics. All activities of the society should be in the direction of assisting in whatever way possible toward the successful conclusion of the war, and although the attendance is not expected to be up to that of former years, it is hoped that the delegates attending the convention will feel assured that their time will be profitably spent during the period of the meeting.

THE EMPIRE STATE GAS ASSOCIATION will hold its annual meeting in the United Engineering Societies Building, 29 West Thirty-ninth Street, New York City, on Thursday, Oct. 10, at 10.30 a. m.

THE PACIFIC GAS & ELECTRIC COMPANY'S employees held the first of a series of get-together meetings at Ebell Hall, Oakland, Cal., Aug. 27. Sidney Coryn delivered an address on "The Great War as It Stands Today." Lowell Redfield led a big chorus of the company's employees in the rendition of war songs. The company's orchestra gave music for dancing. Special election returns were shown.

Construction Notes

Work Started on Shell Manufacturing Plant Being Erected by Laclede Company

Work was begun recently on the first of two shell manufacturing plants to be erected by the Laclede Gas Light Company, of St. Louis, at a cost of approximately $8,000,000. The contract has been let to the Austin Company, of Cleveland. Before the first tree had been felled on the site of the plant agents of the gas company were negotiating for the machinery that is to go into the munition factory. Inasmuch as the project is one in which the Government is vitally interested, it is a foregone conclusion that work will be rushed with all possible speed.

Already a large part of the fourth floor of the gas company's building has been given over to the newly created munitions department. It is apparent, however, that the company is not going to impair the efficiency of the gas department of its business in the slightest degree in filling the important task assigned it by Uncle Sam. A new and separate organization is being built up for the munitions department. The business of this department will be conducted al-

most entirely with the St. Louis regional office of the Ordnance Department.

The shell-making plant is being built near the company's gas plant in the extreme southern end of the city, a few blocks from the Mississippi River. It will be ideally located so far as river and rail transportation are concerned, and almost within a stone's throw of the Laclede company's coking plant. The first plant will consist of a main building 1,000 x 300 ft. and a series of smaller buildings, all of steel, from 30 to 50 ft. high.

Two hundred men started on the excavation work, and the number is being increased daily. It is expected the plant will be in operation early in 1919. Both General Manager Evans, of the gas company, and the officers of the Ordnance Department, who are supervising the construction of the plant, decline to discuss it in detail. It is unofficially reported that the two plants will have a capacity of 10,000 shells a day, about equally divided between 240 and 155 millimeter calibers. It is estimated that 6,000 workmen will be employed. The second plant, also to be operated by the Laclede company, will be erected adjoining the plant of the Scullin Steel Company.

Coal Conveyor Being Installed at Sandusky

A Barber-Greene coal conveyor, which is to be used for the unloading and storing of coal by the Sandusky (Ohio) Gas & Electric Company, has just been received. This conveyor will effect a saving of approximately 50 per cent in the unloading and storing of coal.

Carbon Plant to Be Built at Monroe

A carbon plant will be built at Monroe, La., by the Republic Gas & Carbon Company, of Reading, Pa.

Improvements Being Made at Charleston

Daily Capacity Increased 50 Per Cent

Enlargement and new construction now in progress by the Charleston (S. C.) Consolidated Railway & Lighting Company involve an expenditure in the neighborhood of $100,000, and are the result of the increased demands on the company's service and products.

Apparatus for increasing the gas facilities from the present capacity of 2,000,000 cu. ft. daily to 3,000,000 cu. ft. is being installed, and is expected to be ready in time for the winter demand. If sufficient coke and oil can be secured and the supply maintained, the increase by one-half in the plant's gas capacity should fully cover all the needs of the city.

An oil tank with a capacity of 50,000 gal. is now being constructed, which brings the total storage capacity at the main plant up to 150,000 gal.

Permits for Two Structures Given New Haven Company

Permits have been issued for two buildings on Chapel Street, New Haven, Conn., for the New Haven Gas Light Company. One structure will be 60 x 60 x 40 ft., with corrugated iron sides and a flat roof, and the other will be used as a platform storage and will be constructed of concrete, 66 x 66 ft., with a flat roof.

Hibbing Plant Expected to Be in Operation This Fall

The Hibbing (Minn.) village council has taken steps to insure the operation of the new gas plant this fall. The plant is already under construction.

Increased Rate Sought for Lincoln

The Logan County Gas Company, of Lincoln, Ill., has filed with the State Utilities Commission of Illinois an application for permission to increase the rates for gas in Lincoln.

THE GENERAL GAS & ELECTRIC COMPANY and its subsidiary companies statement of estimated gross revenue for the month of August, 1917 and 1918, and comparison, is as follows:

System	1918	1917	Increase Amount	Increase %
Rutland	$48,091.06	$45,155.80	$2,935.26	6.5
Northwestern Ohio	44,000.00	32,614.07	11,385.93	34.9
Sandusky	32,799.78	38,208.74	*5,408.96	*14.2
Binghamton	34,662.65	28,615.55	6,047.10	21.1
Sayre	10,417.00	8,103.20	2,313.80	28.6
New Jersey	25,449.52	19,168.15	6,281.37	32.8
Interurban Gas	1,292.86	1,139.04	153.82	13.5
Totals	$196,712.87	$173,004.55	$23,708.32	13.7

*Decrease.

Proposed Increase For Geneseo Filed With Commission

The Geneseo Gas Light Company has filed notice with the Public Service Commission, Second District, that on Oct. 1 it proposes to put into effect in Geneseo, N. Y., new rates for gas. The commission has sent notice of the proposed change to the village clerk. New rates proposed are: First 10,000 cu. ft. per month, $2.80 per 1,000; next 10,000 cu. ft. per month, $2.50 per 1,000; all over 20,000 cu. ft. per month, $2.30 per 1,000. Minimum charge of 75 cents per month. Discount of 10 cents per 1,000 cu. ft. for payment within ten days.

Oct. 7 Set for Hearing of Protest on Increase by Providence Company

The Supreme Court will hear the protest filed by the city of Providence, R. I., and others against the 30 per cent increased gas rate granted by the public utilities commission on Oct. 7. Attorney Frank H. Swan, for the Providence Gas Company, says the gas company "may" charge the 35 per cent rate asked for originally and not passed upon by the commission, pending a decision by the Supreme Court.

THE OKLAHOMA NATURAL GAS COMPANY announces that stockholders will be given the right to subscribe to unissued treasury stock to the extent of 15 per cent holding at par. Another corporation will be formed and the Oklahoma Natural Gas Company will convey its oil leases, gasoline plants, etc., to the new concern, which will have capital of $3,000,000. Stock of the new company will be distributed to stockholders of the Oklahoma Natural Gas Company, each of whom is to receive in stock of the new company 30 per cent of his holdings in the Oklahoma Natural Gas Company.